

Vol. 10

TAMPA, FLORIDA, FEBRUARY, 1929

No. 2

Distribution Problems Not Confined To Florida

Florida growers have been told, and many of them apparently have been led to believe that they alone of the world's citrus growers have problems of distribution and marketing which must be met and solved. At least, they have been inclined to believe that their own problems were of a different character or more vexing nature than those confronting citrus growers of other sections.

Evidently this belief is unfounded, as the following article reproduced from the "Citrus Grower" published at Uitenhage, South Africa, indicates that the growers of that section have similar if not identical problems of distribution which they are endeavoring to solve:

For the past two shipping seasons the South African Exchange has been working with the overseas Federated Farmers as their official representative in England, but though this arrangement has been in existence for this length of time it is felt that many growers have only a very vague idea of what this representation means and what the functions of the Overseas Farmers are in respect to our fruit.

For one thing the smaller grower more often than not, has the fear that his interests are sacrificed to those of the bulk of the fruit sent over. What happens in actual fact is that the fruit is sold through exactly the same channels as it was before

with one important difference: that is, that the Salesman is responsible for your overseas representative on the spot instead of to the shipper in Africa, 6,000 miles away.

If, in the opinion of the Overseas Farmers (our representatives) the salesman dealing with the particular brand of fruit is not doing as well for it as could be done, this matter can be dealt with at once, whereas formerly, the grower might not have known, in the first place, that he was not receiving the best possible return, and, even if he had known of this, he might not have known how to deal with the position, and would in the meanwhile have had three or more subsequent shipments sold.

There is a great number of different brands of South African Oranges shipped to England, some are similar in quality, others not. To take an example—Brand "A" may ship 2,000 cases throughout the season, Brand "B" 300,000 cases. Brand "A" is sold by one particular salesman who creates a special market for that brand, whereas Brand "B" would go to three salesmen in different centres.

Salesmen are not the monsters they are often reputed to be and in fact may get nearly as keen on the success of a particular brand as the growers and packers themselves. The personal factor in this selling trade is no less important than it is in any other business.

Another curious influence is the

partiality or dislike that a certain town or district will have for a certain brand of fruit without any explanation being forthcoming. The writer knows of one particular brand that is tremendously popular in two Midland towns in England and most unpopular in a third.

These two points—the personal ability of the salesman and the individual tastes of different centres—are just as important as the general question of distribution and extension of markets, and they show most clearly of what real importance it is to have a very able representative on the spot.

South African citrus has been more widely distributed this season than ever before, but even so dealers have been able to speculate successfully by buying in one centre and selling in another. This statement is not intended to cast discredit on the distribution system but to show up the healthy state of the trade.

As far as distribution is concerned there has been a distinct saving on selling and distribution charges this season. There is still room for reduction of costs, however, especially on railage, the main difficulty of economic distribution. While the contract with the Union Castle Company allows for the company to pay the railage from Southampton to Nine Elms (London), fruit sent by rail direct from Southampton to a centre

Continued on page 28

Citrus Survey In The Orient Region

By Dr. Tyozaburo Tanaka, Professor of Horticulture in Taihoku Imperial University and Director of the Tanaka Citrus Experiment Station, Japan, Delivered Before Synapais Club, Citrus Experiment Station Riverside, Calif. Reprinted from California Citrograph

It is a great pleasure to meet you co-workers on citrus problems and to discuss the subjects which are of common interest to you and me. On my last visit, in 1915, your field experiments had just started, but I never realized that your station had developed to so large and important an institution dealing with such a vast number of problems in citriculture. I believe that the work you are carrying on is unquestionably of great benefit not only to the American citrus growers, but to the whole world. As director of a similar station in Japan I heartily congratulate you on the success won in the past 13 years and I hope that my station will run on the same track as yours.

For the past 20 years I have been interested in the questions:

What are the citrus fruits?

How many citrus species and varieties are there in the world?

Which fruits are better than others? Which are the best of all under given environmental conditions?

To solve these questions one must have confidence in the method he employs; otherwise he may reach an entirely wrong conclusion. The ordinary horticultural method of judging the fruits or describing their characters which are encountered in the course of study was found utterly unsatisfactory, so that I found an entirely different way to attack the subject. The knowledge of distribution of cultivated plants is obtainable from only three ways: (1) from bibliographical survey, (2) from the specimens existing in all herbaria, (3) from actual geographical survey. The aim of such survey work is to obtain exact identification of citrus fruits occurring in various regions and to make exact record of citrus plants now grown in given localities. To accomplish this aim, one must adopt careful botanical methods in naming, describing and preserving the materials. In making a statement concerning any uncommon fruits, the investigator must present the proof to warrant his statement as correct. Moreover, he must be thoroughly prepared in the ecological data in the given localities and must also have enough comparative data to draw out

Dr. Tanaka, one of the leading citrus authorities of the world, recently paid a visit to Florida to study citrus conditions here. He later visited the citrus sections of Texas and then proceeded to California to continue his investigations before returning to Japan.—Editor

final conclusions. From these fundamental considerations started my survey work.

I shall now proceed to the question I want to discuss; that is the citrus fruits of the Chinese coast and Japan. This work has taken me more than ten years, but I am not satisfied as yet, intending to go further on many detailed questions. I don't believe that our variety question has yet been solved. We really need to know more about the local varieties of citrus fruit. The question is very, very fundamental but you remember that it requires very patient inquiry to obtain any information of this nature.

Among the countries of the eastern Pacific coast, Japan is the largest citrus-producing country and about \$15,000,000 worth of fruit is produced annually. Generally speaking, Japanese citrus districts are scattered all around the territories west of the central part of the main islands, where the temperature is between 60° and 63° F., and precipitation between 60 and 70 inches. You will find here the same climatic conditions as has Florida and other Gulf states, but slightly lower in average temperatures. We have, fortunately, no fluctuation in temperature during winter months and no freeze ever hits the country, so that you will see innumerable old trees, some exceeding 100, 200 and even 600 years. If you go still further south to Luchu Islands, both temperature and precipitation advance, but typhoons are too hazardous to develop any industry safely. If you go further down to Formosa, wind is still the largest question, but well-protected valleys of middle-north are inhabited by tremendous numbers of citrus trees. Young planting is rapidly increasing and within 10 years the production will reach about one-tenth of that of

the main islands of Japan.

Now we cross the channel and visit the Chinese coast. The largest citrus-producing areas on the Chinese coast are scattered, but we can enumerate at least five most important localities. They are: Huang yen in Chekiang province, Foochow and Chang chow in Fukien province, Chao chow and Canton in Kuangtung province. In the term of production, Foochow is the largest, Chao chow following, and others will be about the same. We have no statistical data on the citrus production of these places, but I roughly estimate \$5,000,000 from these localities altogether.

Now we come to the question: What kind of citrus fruits are grown in these countries? Everybody knows that sweet orange originally came from China and mandarins are grown everywhere. All books repeat the same story, but no scientist has ever testified this vague, unproved conception. It is true that the sweet orange was first introduced into Europe from China, but it is not a native of China. China has a vast number of varieties of sweet orange, but they are all concentrated in one spot, that is, in Canton where about a dozen varieties are known. Osbeck in 1750, saw these sweet oranges in Canton, and he first described them under the specific name, *Citrus sinensis*, which we still use. Other localities like Chao chow and Chang chow have also sweet oranges, but they are insignificant. We can easily see that Canton is the unique sweet orange country, perhaps the best sweet orange country in the world. It is unquestionable that Arabs, early European travelers, and Jesuits, must have been attracted by this conspicuous species of citrus fruits and that they brought seeds into Portugal, Spain, northern Africa, and so on. I have recently found that the fundamental European varieties of sweet orange are identical with what Chinese call "Sui chang," "Sung chang" or "Sui kom." White oranges, like orange de Blidah; blood oranges, like Malta blood or St. Michael blood; oblong orange, like Chamoudi, and so forth, are all new creations in Europe, but the striated orange, like Du Roi, exists in Canton under the name

"Liu chang." I am, however, surprised to notice that the European missed the best variety of Canton, the Ting chang, which is probably the best orange of the world from the quality standpoint.

Osbeck found 180 years ago that the Chinese were making lemonade from a native citrus fruit called Lem-tses. He described this as *Citrus limonia* and he distributed his specimens to his teacher, Linnaeus, and a few of his friends. Erroneously, this name was applied to the common lemon, but I found this an entirely different thing, now known under the Rangpur lime in America. Otah-eite orange, Kusai lime, Khatta orange, etc., are all its varieties, none of them ranking the class of lemon. Under careful study, the speaker found *Citrus Limon Burma*, f. is the authentic name of lemon, and published the story in series of papers several years ago. Osbeck also saw shaddock and he first named it *Citrus grandis*. Cantonese believe that the best shaddocks are grown in Sha tien in Kuangsai province, but the author admits Wen-tan of Amoy and Formosa is superior, but the Kao pan of Siam is the best. Osbeck never recorded mandarin from Canton, and he is right that Canton is not the large producing center of any kind of mandarin oranges.

Question arises next: What is the mandarin range? Where does it come from? To the English speaking people the mandarin is a generic name, involving all sorts of loose-skinned oranges. To Italians and French "Mandarina" or "Mandarine" is the definite species, which Prof. Tenore first described as *Citrus deliciosa*. I take this opportunity to offer my identification. The American willow-leaf mandarin, or China, is identical with the Mediterranean mandarin, and I raise a question for somebody to study—why this variety did not gain popularity in this country, while this is one of the highly valued economic varieties in Europe. This is your question, but I suggest one thing: you have not the best strain, which the Frenchman calls "Mandarine Algerienne," but yours are "Mandarine d'Ezu," which they are eliminating. My question is not this, but is the question where can I find the Mediterranean mandarin in China? It has disappeared in China or perhaps she never has had this. Seeds of Mediterranean mandarin surely came from somewhere on the Chinese coast, but my trained eye failed to detect it anywhere in this district.

So-called mandarin appeared in the travelers' diaries or customs' re-

THE CITRUS INDUSTRY

ports, and by that was meant principally two things: (1) the Ponkan, the best commercial loose skin orange of the Orient, and (2) the Dancy tangerine, the cheapest and commonest of all loose skin oranges of the same region. Ponkan is an amazing citrus fruit, not a bit known to the expert of citrus fruits of the world. I am glad to mention that you have this orange under the name "Chinese honey" or "Wanurco," which was introduced into Florida between 1902 and 1904. The detailed account of this orange will be published in *Journal of Heredity* very soon. Chao chow is the producing center of Ponkan, and you will see there the real southern California of the Orient, plants being cultivated on flat land under irrigation. They have genuine Chao chow method of citriculture, wonderful close planting, maintaining sufficient tree vigor, soil fertility, and heavy yield. You will find in my publication a suggestion somewhat revolutionizing the present system of citriculture, but I shall refrain from going into detail.

A sister species of Ponkan is also cultivated in Chao chow, called Shao kan, better known under the name "Tankan." These two oranges, Tankan Ponkan, are the principal citrus fruit in Chao chow, Chang chow, and Formosa, but if you proceed further north to Foochow you will find not a single tree of these oranges, but you will notice a tremendous acreage of plantings of Dancy tangerine, all raised from seed, as you see in Florida. Chinese are wise enough to see that Dancy tangerines always come true to seed. Han Yen-chih, the greatest Chinese authority on citrus, mentioned this account in the twelfth century. Nowhere in the world is the standardization of the fruit tree going in such a far-reaching way as in Foochow. Barrel after barrel of red skin oranges are shipped to the large cities, Shanghai, Peking, and Tienchin in the new year days, and millions of average people enjoy this cheap, seedy orange, while Ponkan is admired by a higher class of people. Here I raise another question: Why you people pay \$4 a box for such a cheap fruit? I answer negatively the question whether the Florida product is better than Foochow product. And I hope not the Florida condition is not sufficient to raise Ponkan and Tankan. I advocate the better understanding of these varieties, together with the systematic study of rootstock situations for these unquestionably superior types of citrus fruits.

Proceeding further north you will

reach a region almost identical with Japan in climatological requirements. Huang Yen in Chekiang province is in just the same condition we found in Japan in the southernmost prefecture. They have about five different races of citrus fruits in every orchard, all being small fruiting loose skin oranges. The Chinese clearly distinguish two groups of loose skin oranges: large one by the name "Kan," smaller one by the name "Chieh." Chao chow, Chang chow and Foochow were Kan districts, but here Han yen is Chieh district, so to speak. In this respect Chinese are better botanists than the western scholars who distinguish only one species, *C. nobilis*, to cover all sorts of loose skin oranges from large to small, round to nipped, thin to extremely thick skinned, pale yellow to vermilion red, smooth to extremely warty skin, etc. You distinguish lemon from citron and sweet orange from sour orange because you are familiar with them, but there is no reason you call all loose skin oranges a single species because you are not familiar.

The only logical treatment of these oranges is to handle them entirely separately as you handle lemons, citrons, sweet lumias, lumies and perettas, limes and bergamots separately. Now, returning to the Chiehs of Huang yen, I enumerate five distinct races: (1) Shihchieh, (2) Tientai shan chieh or Pen ti tsao, (3) Chusha chieh, (4) Man chieh, and (5) Ts'ao chieh. The first two are grown in Japan and the last is a variety of King orange. I was still unable to find a true King orange in China though it appears in Chinese literature. King orange was first described from a small place in Anam called Hue, and is now considered by the Frenchmen a very rare fruit, named "Orange de Cambodge." You will be surprised that this rare orange is the *Citrus nobilis* of Loureiro, which you consider to cover the whole thing. I shall omit an interesting story of how this orange reached Japan, but shall simply mention that the true *C. nobilis* is called in Japan "Kunembo" and forms the principal race cultivated in the Luchu Islands.

Now was come back to Japan. Except in a few localities like Kagoshima, mentioned above, the citrus regions of Japan are highly specialized to one most important race and two minor races. The principal race is the Satsuma orange and others are Washington navel and Natsu daidai. At any rate, Japan is the Satsuma country, and this is the best commercial citrus fruit because it requires the least

Continued on page 30

Expansion Of The Orange Industry In Palestine

By Harry Viteles in "The Palestine Citrograph"

The total area, both Jewish and non-Jewish, is probably very close to 60,000 dunams,* about evenly divided between fruit-bearing and non-fruit-bearing areas. Prof. Powell estimates that there is still available in Palestine about 255,000 dunams (60,000 acres) of land suitable for the growing of oranges.

By the end of 1928 there will be 30,500 dunams of Jewish groves in Palestine as compared with 10,000 dunams at the end of 1922. The total Jewish area is distributed as follows:

- (a) Fruit-bearing groves 10,217 dunams
- (b) Non-fruit-bearing groves (planted) 12,878 dunams
- (c) Non-fruit-bearing groves (prepared and to be planted in Spring 1929) 3,405 dunams
- (d) Land in the course of preparation, which will be planted before the end of 1928 4,000 dunams

Total 30,500 dunams

The average size of the Jewish fruit-bearing groves was about 42½ dunams, or about ten acres, while that of the non-fruit-bearing groves was less than 22 dunams.

In Palestine there is a movement of colonisation on small areas of fruit-bearing grove—10 or 15 dunams. The estimated net annual cash income from an area of ten dunams of orange grove—after deducting all operating costs, amortisation of plant and capital—is not less than L.P. 100 which is sufficient for the average agricultural family in Palestine.

It is of interest to note that over 75 per cent. of Jewish young orange-groves were less than 10 dunams each; only less than 10 per cent. of the non-producing groves were 60 dunams or more each.

Before the war a dunam of fruit-bearing orange-grove in Palestine was worth from L.E. 50—L.E. 75. Today it is impossible to buy a fruit-bearing orchard at less than L.E. 150 per dunam, and L.E. 175—L.E. 200 per dunam are not unusual prices for the better groves. For the purpose of this study, an average value of L.E. 125 per dunam is accepted for fruit-bearing groves.

A conservative estimate of the average market value of one dunam of a young grove already planted and having water installation is L.E. 45.

The estimated value of the present area of the Jewish orange-groves is, therefore more than L.E. 1,850,000.

Production—Fruit Bearing Groves

The oranges exported are estimated to represent only 70 to 80 per cent. of the total crop—the culls being sold in Palestine. The larger part of the total fruit-bearing area (about 30,000 dunams) have been yielding crops more than ten years, since most of the groves were planted prior to 1911. As to the number of trees per dunam, the most frequently heard figure is 100 trees, (400 to the acre—Ed. "Citrus Grower.")

The annual production of Jewish groves is estimated to be 100 boxes of exportable fruit per dunam, and that of Arab groves—70 boxes. With these figures as a basis, the Jewish annual production is about 1,000,000 cases, the Arab production—1,400,000 cases of exportable fruit.

That this estimate closely approximates the actual facts is seen from the fact that the exports in the calendar year 1927 amounted to 2,567,199 cases and in the season 1926-27 to 2,213,983 cases. The export of oranges have more than doubled since 1922—increasing from 1,238,899 boxes in the calendar year 1922 to 2,658,199 in the calendar year 1927.

Comparing the total production in Palestine with that in Florida and California, the average production per dunam appears to be much lower in Florida and California, while that per tree is higher than in Palestine. That is accounted for by the very small distance between the trees in Palestine groves.

Non-Fruit-Bearing Jewish Orange Groves

Beginning with the season 1932-33, the increase in the Jewish exportable orange crop is estimated to be 359,652 cases, or more than one-third of the Jewish crop sold abroad to-day. As present yield of Jewish fruit-bearing orange groves is very close to a million cases for export, therefore, not taking into consideration the additional area of 4,000 dunams which will be planted up to the end of 1928, the Jewish exportable orange crop

will be more than doubled during the season 1935-36, the new groves will yield 1,053,512 cases. It is also safe to assume that the non-Jewish area of young groves is equal to that of the Jewish (many believe it to be in excess) and of practically the same age-distribution. Even assuming a lower average productivity per dunam in the case of these non-Jewish groves, all facts point to the conclusion that by the season 1939-40, the total exportable orange crop in Palestine—both Jewish and non-Jewish—will be well over six million cases. But it is not unexpected that some of the groves may be abandoned because sufficient credits with which to complete the development are not available. The estimated total annual exportable production of 6,000,000 cases in the year 1939-40 is also conditional upon a price and market situation which would make it possible for growers to remain in the industry. There will arise not only the question of developing new markets for the exportable fruit but also for the "culls"—about 20 per cent. of the entire crop—which will exceed the capacity of the local market. It will be necessary to consider the establishment of factories for the manufacture of orange by-products—marmalade, orange juice, etc. Furthermore, the increasing number of young groves will yield relatively a large amount of large fruit (Marseillia) for which there is a small demand on the English and German markets. Constantinople, which, before the war was the principal market for the large fruit is now closed to the Palestinian oranges. It is most essential that the Government should exert every effort to open again this market for the Palestinian fruit.

Those exploiting new groves can be divided into three categories:

(1) Residents in the older settlements having annual definite and fixed incomes from the sale of other agricultural products—such as fruit bearing orange-groves, dry plantations, etc., or from other employment. For the most part, this crop can offer sufficient security in the form of first mortgages on the land or other guarantees to raise the necessary credits. 158 growers of the category received

Continued on page 28

Rubber

Florida Rubber Trees Thrive; May Be Crop For Drain- ed Areas

Experimental plantings of several different kinds of tropical rubber plants in Florida are demonstrating, according to investigators in the United States Department of Agriculture, that rubber-yielding trees and vines are able to survive and flourish under Florida conditions. At present, however, the department is not ready to make predictions as to the possibilities of commercial rubber-planting in Florida.

Last winter was considered the most severe in forty years in the vicinity of Miami, according to O. F. Cook of the Bureau of Plant Industry who is in charge of the experiments. This afforded a good test of reactions to cold weather. Many small plants were killed, but those of larger growth and in good condition were not injured in most cases. Some were cut back by frost, but recovered promptly and made vigorous growth through the summer. All the principal types of rubber trees, including those used for planting in tropical Asia, Africa, and South America, are represented by thriving plants in the Florida experiments.

The Chapman Field plantings are near the coast, and it was evident that the strong sea breeze retarded the growth of the young trees, and that protection was necessary. "When this was supplied," said Mr. Cook, "the plants responded with vigorous growth, apparently as normal and as rapid as in the tropics. Even the Hevea or Para rubber tree of Brazil is showing ability to thrive there. The seedlings and young trees that have had protection from the wind at Chapman Field have grown as well or better than in plantings under tropical conditions in Haiti and Panama. It is probable that normal Hevea trees may grow to maturity in many areas of southern Florida."

Locations must be chosen where the roots can reach the level of permanent moisture in the soil, says Mr. Cook, and shelter from the wind will be needed if the seedlings are to develop rapidly. "Apparently," he says, "they are not less tolerant of cold than many of the tropical plants that have been introduced in southern Florida. It is still too early to form

an opinion regarding the feasibility of growing rubber in Florida, but, we must lay aside the current belief that the Hevea tree is very delicate, and hence must be confined to a narrow equatorial belt of the tropics. A single Hevea tree has lived for more than 20 years in Florida, at Palm Beach, under conditions much less favorable than occur elsewhere. Castilla rubber trees from Central America, which apparently are more tender than Hevea, grew for 12 years on the South Shore of Lake Okechobee and attained a height of 40 feet, but were destroyed in the hurricane of 1926.

"The ability of Hevea to grow in flooded lands is known from experience in South America. This may make it useful for shade or ornamental purposes, apart from its usefulness as a rubber producer. However, the production possibilities of Hevea and other rubber plants should be investigated thoroughly since most of the land being reclaimed in southern Florida remains subject to flooding in storm periods. Much of the reclaimed land is not now cultivated, and there is great need of crops that floods will not destroy. Many sanitary and mosquito-control improvements might be undertaken if a crop were available for lands raised a little above water. Such lands would not be safe for any of the tree crops now grown, but possibly could be utilized for rubber production.

"The Assam rubber tree (*Ficus elastica*) and two species of rubber vines, (*Cryptostegia grandiflora*) and (*Cryptostegia madagascariensis*) are being utilized in southern Florida for shade and as ornamentals. Hevea, Castilla, Manihot, Funtumia, and Mascarenhasia are trees of striking and attractive appearance, and no doubt will be planted in many places as soon as seeds or young plants are available in sufficient quantities. Such ornamental planting would assist in determining the behavior of the trees under different conditions and treatments, and would extend the production of seed. Little is known as yet regarding the habits or requirements of these new trees in relation to the Florida conditions. We will require

tests in many localities, and with many different methods of planting the trees and extracting the rubber, before practical conclusions can be drawn regarding possibilities of commercial rubber-planting in Florida."

The public will be informed, the department promises, as soon as the supplies of seed or propagating material are sufficient for more general experimental or ornamental planting.

BLUESTONE RECOMMENDED FOR DIEBACK OF CITRUS

Citrus dieback

Citrus growers often write to the Experiment Station to know what to do for dieback. One grower recently wrote that he had been given several suggestions for treatment of this disease and none of the remedies were the same.

The standard treatment recommended by E. F. DeBusk, extension citrus specialist, is an application of copper sulphate and a reduction of the plowing and cultivation of the grove. For a tree five years old Mr. DeBusk recommends three-fourths of a pound to a pound of the bluestone.

The cause of this disease has never been determined.

Tanaka, T. Tanaka

JAPANESE CITRUS EXPERT SEES CALIFORNIA GROVES

Dr. Tyozaburo Tanaka, Director of the Tanaka Institute in Japan and appointee to the chair of horticulture in the Taihoku Imperial University at Taiwan, Island of Formosa, Japan, who recently completed an investigation of the citrus industry in Florida, is now in California for a similar survey, it has been learned from there.

Dr. Tanaka is one of the world's foremost authorities on citrus fruits, and at his institute in Japan he has one of the largest collections of citrus specimens in the world. He has been spending a year in travel and investigation before assuming his post at the university, to which he was named last year.

He started his investigation of the California citrus industry early this month at the experiment station of the University of California near Riverside, Cal.

CITRUS COMMENTS

—BY—

Charles D. Kime, Orlando, Florida

This department is devoted to furthering horticultural interests of Florida. Letters of inquiry, discussion or criticism will be welcomed.

Is Citrus Fertilizing Approaching a Complete Revolution?

Our present custom of fertilizing arose as a result of experimental trial by the grower drastically influenced by cost of the raw material and ease of manufacture on the part of fertilizer companies. Fertilizing started because of necessity, beginning with manures and other organic sources. Chemical sources developed as an after-thought because of the acute demand for cheaper source of plant food. From every angle of production, they are assuming an importance and interest that has far-reaching consequences.

Former commonly used organic sources are disappearing from the fertilizer market and appearing in mixed feeds manufactured for livestock. Cotton-seed, tankage, bone, dried blood, fish scraps and others are gradually disappearing from the fertilizer trade, leaving such forms as castor pomace, chemically treated low-grade waste products such as garbage tankage and natural guanos as imported from Peru, Pacific Islands and Mexico. These forms have no value as feed-stuffs.

In the place of organics, an ever increasing list of chemically manufactured products are making their appearance. These new products challenge our interest and open up unlimited possibilities for influencing fruit production and fruit quality.

Florida state laws for the protection of the fertilizer purchaser have based their rulings on total water soluble material for potash; water soluble plus ammonium citrate soluble percentage for phosphorus and in case of nitrogen, the water soluble is extracted first and then several different methods of determining the easily convertible remainder may be employed.

Organic Fertilizer Sources

BONE, BONE-BLACK and BONE MEAL are organic compounds of: Ammonia (NH_3). Their average analysis will run:

Ammonia NH_3	1-4%
Phosphoric acid P_2O_5	20-35%

Bone Phosphate about -45%
Bone Black has a carbon content of -10%
Steamed bone has less ammonia 2-3%
and Bone phosphate of 50-60%

CASTOR POMACE is the castor bean waste after the oil has been extracted. An average analysis will run:

Ammonia NH_3	5-8%
Phosphoric acid P_2O_5	1-1.5
Potash K_2O	1-1.5

It is used as a source of ammonia on citrus and is a good fertilizer.

COTTONSEED MEAL for fertilizer is usually the low grade cake unsuited to cattle feed. It is the residue left after pressing cottonseed for oil. An average analysis will run:

Ammonia NH_3	6-9%
Phosphoric acid P_2O_5	2-3%
Potash K_2O	1.5-2%

FISH SCRAP is a good source of ammonia and when treated with sulphuric acid, of phosphorus as well. It will run 8-12% of ammonia (NH_3) and 4-8% of Phosphoric acid (P_2O_5).

DRIED BLOOD is the easiest available organic ammoniate and is effective as a fertilizer, though it is expensive. Average analysis:

Ammonia	10-17%
Moisture	5-15%

TANKAGE from GARBAGE is low grade and somewhat undesirable for fertilizing. It may average:

Ammonia (NH_3)	3-4%
a small amount of Phosphoric acid (P_2O_5)	2-5%
and a trace of potash	0.5-1%

GUANO is an excellent organic fertilizer and is fairly plentiful. The ammonia content is easily available. Average analysis:

	Peru	Chile
Ammonia (NH_3)	11	6.5
Phosphoric acid (P_2O_5)	12	15
Potash (K_2O)	—	—
Moisture variable		

HARDWOOD ASHES if unleached may run up to 8% potash (K_2O).

KELP is at present an unimportant source of potash. It will average 15-20%.

H. G. TANKAGE is a valuable source of organic fertilizer. An av-

erage analysis of material offered will run:

Ammonia (NH_3)	8-10%
Bone Phosphate	6-10%
Moisture	8-10%

TOBACCO STEMS make an excellent fertilizer. They carry 2-4% ammonia and 4-9% potash.

Ammonia Compounds

Ammonium Chloride (NH_4Cl) is too high in chlorine for extensive use on citrus and is expensive because of cost of hydrochloric acid.

AMMONIUM SULPHATE ($NH_4^2SO_4$) is formed from ammonia and sulphuric acid. The ammonia is derived from illuminating gas in one process. In another the Haber-Bosch Nitrogen Fixation process is used to synthesize ammonia from the air and water. Gypsum is then used in making these processes a 25% ammonia (NH_3) product results. This is a valuable and inexpensive form of plant food.

AMMONIUM - SULPHATE - NITRATE is a further combination of available forms of nitrogen. It averages 26% N. with $\frac{1}{4}$ from quickly available nitrate nitrogen and $\frac{3}{4}$ ammonia nitrogen. It is a chemical compound and therefore uniform throughout.

NITRATE OF SODA ($NaNO_3$) is a salt obtained from Chile where it occurs in natural deposits. It is dissolved out of the caliche and refined. A typical analysis shows other materials that may be beneficial to plants:

Sodium Nitrate	95%
Nitrogen equivalent	15.66%
Ammonia equivalent	19.04%
Potassium Chloride	.64%
Sodium Sulphate	.92%
Sodium Iodide	.29%
Magnesium Chloride	.93%

SODIUM NITRATE B A S F is a synthetic product from air nitrogen and is similar to the Chilean Nitrate of Soda.

NITRATE of POTASH is a Chilean product and is used on citrus and truck. Average formula 18-0-14 on basis of available ammonia and potash (K_2O).

AMMONIUM-NITRATE (NH_4^+

O³) is formed from ammonia as gas and nitric acid. Both base and acid contain nitrogen so the resulting product is high in availability. Analysis:

Total nitrogen	35.0%
Am. N H ³ equivalent	42.5%

AMMO-PHOS results from combining cyanamid (C^a CN²) and steam and passing the resulting gas through liquid phosphoric acid, giving a variable ammonia and phosphoric acid compound. Sample analysis will run:

Am.	Ph.	Pot.
12	-	24
10	-	20
10	-	30

DIAMMONPHOS I G is a high percentage synthetic compound.

Nitrogen	21%
Sol. Phosphoric acid	53.4%

UREA B A S F is a valuable organic form of very highly available ammonia. A 46% nitrogen material is produced by combining carbonic acid and ammonia under high pressure and temperature. This is a synthetic product but the ammonia is in organic form. The ammonia equivalent is 55.6%.

UREA-CALCIUM-NITRATE. Calurea is trade name. It contains 34% nitrogen and 14% lime. About 4-5 of the nitrogen is in organic (amid) form.

Single Phosphate Sources

ACID PHOSPHATE P²O⁵ usually 16% available, is made by treating phosphate rock with sulphuric acid in chambers lined with lead. The resulting product is a mixture of available and unavailable acid phosphate and of gypsum.

BASIC SLAG, a combination of phosphoric

acid (P ² O ⁵)	11-25%
lime (CaO)	about 50%
Silica (Si O ²)	about 10%

Double-super-phosphate is the resulting product from a two stage treatment of phosphate rock. In the first stage, weak sulphuric acid gives an acid phosphate. This material is further treated by filtering out of the gypsum which is discarded. The phosphoric acid (H³P O⁴) remaining is then concentrated by evaporation and used in treating additional rock. There is no gypsum in this material. An average analysis will run:

available phosphoric acid (P ² O ⁵)	40-50%
insoluble phos. acid	-4%
moisture	4-8%

Potash Sources

KAINIT is a mineral occurring in natural deposits of potash found in Germany and France. Average analysis:

actual potash (K ² O)	12-16%
----------------------------------	--------

MURIATE of POTASH is produced at Searls Lake, California in this country and from potash deposits in France and Germany. It analyzes about 50% K²O. It is also known as potassium chloride (K Cl).

POTASSIUM NITRATE (K N O³) is manufactured from nitrate of soda and muriate of potash. Analysis pure Potassium Nitrate:

Potash (K ² O)	46.6%
total nitrogen	13.9%

POTASSIUM SULPHATE (K²S O⁴) is usually derived from treating muriate of potash with sulphate of magnesia. It occurs to some extent in natural deposits and can be made by action of sulphuric acid on caustic potash. It is the best source of potash for citrus. Commercial potash will run 49% K²O or over 90% K²S O⁴.

SULPHATE of POTASH-MAGNESIA is a form of potash frequently used in citrus. Analysis:

Potash (K ² O)	25%
Sulphate of Magnesia	25%
Chlorine, about	2.5%

SYNTHETIC AMMONIA combined with PHOSPHORIC ACID and POTASH. A whole series of such chemical combinations of high availability are now offered commercially. Some sample formulas run:

Am. Ph. Pot.	15--30--15--60 total plant food units
	15--11--26--52 total plant food units
	15.5-15.5-19--50 total plant food units

Calcium Forms

LIME or CALCIUM AS CARBONATE CaC O³ such as lime stone, oyster shell, etc.

CALCIUM OXIDE — burnt lime Ca O made by heating CaC O³ to a temperature sufficient to drive off carbon dioxide.

HYDRATED CALCIUM OXIDE is the burnt lime slacked with 20%-30% of water.

CALCIUM NITRATE Ca (N O³)² a salt made by combining nitric acid with limestone or burnt lime. The average analysis would run

(Ca O) lime	34.2%
(N H) ammonia	20.7%

This form of calcium nitrate is also produced from nitrogen extracted synthetically from the air.

CALCIUM PHOSPHATE Ca³ (P O⁴)² is made by the action of phosphoric acid on lime. In nature this is a very insoluble material. The natural phosphate rock is treated with sulphuric acid which treatment gives several phosphate forms.

Free Phosphoric acid is water soluble H³P O⁴

Mono Calcium Ph is water soluble CaH (P O⁴)²

Di Calcium Ph is citrate soluble

Tri Calcium Ph is insoluble Ca³ (P O⁴)²

Commercial phosphoric acid is known as Super-Phosphate and should analyze about 16% water and citrate soluble.

CALCIUM SULPHATE is formed by action of sulphuric acid on lime. SYPSUM is hydrated-calcium-sulphate.

Cyanamid is made commercially by passing nitrogen over a heated mass of calcium carbide resulting in a mixture of about 25% calcium hydroxide, 70% calcium cyanamid. About 20 to 25% of the whole is a nitrogen form. It is interesting to note that this nitrogen is classed as an organic nitrogen.

Related Materials of Interest in Fertilizing Work

CITRIC ACID is a weak organic acid used in determining availability of phosphoric acid in fertilizers. It is made from lemon juice.

DOLOMITE is a mixture of limestone and magnesia. It is used for correcting soil acidity and source of magnesia. Analysis vary but a true dolomite should average:

Lime CaC	30.3%
Magnesia (MgO)	21.8%
Carbon Dioxide (C O ²)	47.9%

FELDSPAR contains potash, silica, aluminum. Sometimes used in bacterial mixtures as a source of potash.

IRON OXIDE-FERRIC OXIDE Fe²O³ occurs in phosphate rock. Some iron is needed by plants.

GYPSUM - LAND PLASTER. Found in acid phosphate. It is composed of sulphate of lime (Ca) and water with formula CaSo⁴. 2H²O.

MAGNESIA—is often found in limestone and is useful in plant growth.

PEAT OR MUCK may be of value for bacterial stimulation.

Phosphate rock of little value raw but a source of phosphoric acid when properly treated. Analysis:

	hard rock
Phosphate of lime	77-78%
Iron and alumina	2-3%
Carbonate of lime	4-6%
Flourine	3-5%

COPPER SULPHATE & IRON SULPHATE are useful in tree growth.

SLUDGE is sewage residue and is useful for fertilizing only when properly rectified.

SULPHURIC ACID H²S O⁴ is used in conversion of many unavailable plant food materials to available forms.

Sulphur makes sulphuric acid by combining with oxygen and hydro-

Continued on page 26

The Citrus Industry

with which is merged The Citrus Leaf

Exclusive publication of the Citrus Growers and Shippers

Address all communications to the Main Office
413-415 Stovall-Nelson Building
Tampa, Florida

Telephone 4819

S. L. FRISBIE, Editor and Manager

FRANK KAY ANDERSON Assistant Manager

C. D. KIME Horticultural Editor

A. G. MANN Production Manager

Published Monthly by
Associated Publications Corporation
Tampa, Florida

Subscription, \$1.00 per year in advance

Entered as second-class matter February 16, 1920, at the post-office at Tampa, Florida under the act of March 3, 1879.

Branch office and production plant, Bartow, Florida.

CHICAGO OFFICE
28 EAST JACKSON BOULEVARD
Telephone Harrison 1233
William Robert Shannon, Manager

GROVE CALENDAR FOR FEBRUARY

Timely Suggestions For Grove Work During The Present Month

Disc around bearing trees. Do not disturb banks around young trees.

Spray or fumigate for control of scale and whitefly.

Spray with bordeaux-oil emulsion for control of scab.

Apply fertilizer to bearing trees. This application of fertilizer should contain a high percentage of ammonia and a low percentage of potash.

Secure seed and prepare ground for planting of your spring cover crops.

Complete pruning and treat old seedling trees for foot-rot. Replace trees where needed.

THE GREEN FRUIT LAW

Charges involving two inspectors acting under the provisions of the green fruit law have been filed in the criminal court of record of Polk county on information by County Solicitor J. H. Peterson. The charges were brought at the instigation of Polk county growers who have been active during the season in tracing down the excessive shipment of green fruit during the inspection season which under the law closes on December first.

The green fruit law was first enacted by the

state legislature four years ago, as the result of united action on the part of citrus growers and shippers acting in conjunction with the state commissioner of agriculture. The law as first enacted was found inadequate, although its operation even in its incomplete stage was productive of some good. Two years ago, again at the instigation of growers and shippers and again with the co-operation of commissioner of agriculture, the law was amended and strengthened, with the purpose of making it more effective.

Under this law numerous inspectors are appointed by the commissioner of agriculture, whose duty it is to inspect all fruit offered for shipment by the various shippers and packing houses each season prior to December first, when it is assumed that all fruit packed is ready for market.

Early this season complaints were made that an excessive amount of green fruit was finding its way to Northern markets in spite of the inspection service. Charges were freely made that more green fruit was being shipped from the state than in any previous year, even before the enactment of the green fruit law. Acting upon these complaints and charges, Commissioner of Agriculture Nathan Mayo assumed personal charge of the inspection service in an effort to improve the service.

An association of Polk county growers banded together to make a personal investigation of the charges and a committee was sent to Northern markets to pursue the investigation. This committee reported that during the early days of November 68 per cent of the fruit shipped to New York, Philadelphia, Washington and other Northern cities was found to be "green" under the requirements of the green fruit law.

As a result of this excessive shipment of green fruit, the growers contended that the price of all Florida fruit had been forced down far below the normal price and that all growers had suffered loss in consequence.

However, the activities of the growers did not end here. Their organization was continued and efforts were made to place the responsibility for the flooding of the markets with immature fruits. The filing of charges of bribery against two inspectors is the result of these continued investigations. It is further stated that other inspectors are under suspicion and that further informations may be filed.

In the meantime, in a speech made at the Florida Orange Festival in Winter Haven in January, State Senator Pat Whitaker of Tampa, charged that the inspection service was being used by Commissioner Mayo in an effort to further his political aspirations. This charge was indignantly denied by the Commissioner, and his friends contend that the charges of Senator Whitaker are the result of personal animosities between the Senator and the Commissioner. Be this as it may, the situation has become acute and there is a seeming determination to go to the root of the matter in an effort to eradicate the evils at present existing in the inspection service.

On behalf of Commissioner Mayo it is pointed out that the evidence against the two inspect-

*When fruit inspectors
law is regulations*

ors charged with bribery was secured by Federal investigators placed on the job at the request of Commissioner Mayo with instructions to ascertain the facts regardless of who might be hit by the investigation.

Prior to the filing of the bribery charges, a meeting was held at Winter Haven at which growers and shippers, acting with Commissioner Mayo, sought means of still further strengthening the green fruit law and providing it with "teeth" which would insure its strict enforcement. That some such alterations in the present law will be made at the forthcoming session of the legislature seems to be the general belief of growers and shippers, who for the most part realize that much of the responsibility for the unsatisfactory and unprofitable prices prevailing is due to the practice indulged in by a few growers and shippers in their efforts to secure the high prices usually prevailing at the opening of the shipping season, albeit the practice ultimately results in the lowering of prices and the discrediting of ALL Florida fruit later in the season, when the fruit is actually at its best.

The Citrus Industry believes that the present agitation and the prosecution already started will result beneficially to the industry as a whole. While the situation this year has been disastrous, coming as it did on top of an enormous crop in both Florida and California and an unusual amount of small sizes and fruit of unsatisfactory appearance, the enormous amount of green fruit finding its way to the market has so aroused public feeling that remedial measures seem certain to be the result.

The Citrus Industry has always endorsed the green fruit law and the measures taken to strengthen it, as The Citrus Industry has endorsed every movement for the production of fruit of better quality and appearance, and every movement for the better handling of distribution, grade and pack. If "teeth" can be put into the present law to insure its enforcement, they should be provided. If additional laws are needed, they should be forthcoming. Growers, shippers and inspectors should be made to realize that green fruit shipments must stop.

When Florida produces fruit of the excellent quality of which the state is capable, when Florida produces fruit of appearance equal to that of any competitor, when Florida fruit is uniformly graded and packed, when Florida fruit is systematically distributed, and when Florida fruit is adequately advertised, Florida growers may hope to secure an adequate return for their investment in groves and labor. Until these results are achieved, Florida growers must continue to market their fruit at prices below the intrinsic value of the product. The time is ripe for action. It behooves Florida growers to act in unison and harmony.

Citrus fruit CITRUS POLITICS

Florida newspapers and Florida business men are showing an active interest in the citrus industry of the state. This is as it should be, for citrus is the greatest single industry, the greatest single asset of the state. The best minds of the state are properly interesting themselves in

the solution of citrus problems.

Just recently, the Orlando Reporter-Star carried an editorial under the heading "Citrus Politics" in which some very pertinent thoughts were suggested. After citing the recent charges and recriminations launched at a meeting of growers and shippers at the Florida Orange Festival at Winter Haven, calling attention to the failure of the green fruit inspection law to properly function, and protesting the general tendency of various citrus interests to "pass the buck," the Reporter-Star says:

"It is reported that one day last week 89 cars of citrus fruit sold on the auction market of New York in 89 minutes. That's selling them too fast for good results. And this calls to mind the days when fruit was sold on the track in Florida. Buyers from the North spent their winters here inspecting the fruit themselves and buying the grade of fruit they wanted and paying for it here. Their inspection seems to have been more satisfactory to the trade than present methods, and Florida fruit did not suffer as much in reputation then as now. Of course production was not so large then. But the fact remains that market conditions never were more deplorable than now, and in the discussions going on, responsibility for these conditions is shifted from one party to another of the very agencies that were constituted for the protection of the industry. The picture is not reassuring. Whatever be the truth of the charges and counter-charges made in the Winter Haven meeting, confidence in our inspection system has not been strengthened. The moral for the grower is, "Grow better fruit and leave it on the trees until your own good judgment tells you that it is in condition to go onto the market and maintain the reputation of an industry you are vitally interested in."

The Reporter-Star is right in assuming that there is a big element of politics in the citrus situation in Florida, and that there is entirely too much disposition to "pass the buck." The Reporter-Star is even more correct in saying that the grower may do much to curb this evil by "growing better fruit and leaving it on the trees until the grower's own judgment tells him that it is in condition to go on the market and maintain the reputation of an industry in which the individual grower is vitally interested."

Less politics and a greater regard for the welfare of the industry as a whole is one crying need of the present situation.

Prof. Camp well points out that frost protection amounts to something more than merely buying a supply of grove heaters. The heaters must be used—intelligently—if they are to prove profitable to the purchaser.

Many new grove plantings are in evidence. For the most part these plantings are being made by people who have had previous experience and who know that groves properly planted with trees of quality and properly handled, are a source of profit to the owner.

Robinson Confers On Rates

J. Curtis Robinson, Executive Vice-President of the Growers and Shippers League of Florida with headquarters in Orlando, and General Manager of the Florida Citrus Growers' Clearing House Association with headquarters in Winter Haven, Florida, left for Chicago on January 12th to attend the Eleventh Annual Convention of the American Fruit and Vegetable Shippers' Association.

Mr. Robinson is a member of the Traffic, Claims and Trade Committees of the Association. In the absence of the Chairman of the Traffic Committee he will act in that capacity.

While in Chicago Mr. Robinson conferred with the Traffic Managers of various Jobbing and Marketing concerns relative to the pending hearing before the Interstate Commerce Commission which will be called to consider the failure on the part of the carriers to fully comply with the Commission's order pertaining to citrus rates applying from Florida points of origin to destinations located in Intermediate Territory, popularly designated as "No Man's Land." This territory is comprised of, that portion of Minnesota lying north and west of St. Paul, also the states of North and South Dakota, Nebraska, Colorado and New Mexico.

In the Line Haul Rate Case, Docket 16939, decided July 10, 1928 the Interstate Commerce Commission in reference to this territory ordered that the rates should be "equitably graded" as between the rates prescribed to the most westerly points in Western Trunk Line Territory, (adjoining the disputed Territory on the east), and the rate of \$1.80 prescribed to Transcontinental Territory, (adjoining the disputed territory on the West). In publishing the rates, however, the carriers applied the rate of \$1.80 to approximately 80% of the points of destination located in the disputed territory, many of them only a short distance beyond the most westerly points in Western Trunk Line Territory. As a result the Commission on their own motion have reopened Docket 16939 to further consider these rates. Date for hearing has not yet been set.

According to statement obtained from the Growers and Shippers League, the Florida Railroad Commission and Mr. Robinson will look after the interests of the growers and shippers of the state when the hearing is called. The League will be represent-

ed by their Counsel, C. R. Marshall, of Washington, D. C.

Studies carried on by the agronomy department of the Florida Experiment Station for the past two years indicate that fertilizers, particularly nitrates, greatly increase the growth of pasture grasses.

Doc Hiller says a recent squib in "Hygeia" advises that two or three drops of the glycerite of tannic acid

in half a cupful of water is excellent for sore or tender gums. Thoroughly scrub the teeth and gums with the mixture, using a good grade tooth-brush.

"My love will last forever."
"How about your liquor?"

Who was it said that the motto of Rotary is "I'd rather be trite than President?"—Pitt Panther.

Send for these— Free!



"25 YEARS OF PROOF" is a most interesting booklet, fully illustrated throughout, giving a brief history of the growth of the Gulf Fertilizer Company and the opinions of many prominent Florida growers and farmers on Gulf brands of Fertilizer.

"TIMELY TOPICS" is a brightly written monthly folder brimful of valuable and practical suggestions written by Florida experts on problems of the moment.

"GULF CATALOG" is a description of Gulf Brands of Fertilizer, giving the Formulae of the various Gulf Brands and the actual materials used in their manufacture.

"GULF PRICE LIST" supplies the information indicated by its name.

The
Gulf Fertilizer Co.
TAMPA, FLORIDA

*Just clip
this Coupon*

Please Send Me the Booklets Checked
25 Years of Proof ☐ Price List ☐
Timely Topics ☐ Catalog ☐

Name _____
Address _____

Oriental Persimmon Deserves Attention of U. S. Growers

Our food supply would be materially broadened if American horticulturists would give to the oriental persimmon the attention it deserves, says P. H. Dorsett, one of the plant explorers in the service of the United States Department of Agriculture who made his observations on the persimmons in China and Japan, in Circular 49-C, "Culture and Outdoor Winter Storage of Persimmons in the Vicinity of Peking, China," now available for free distribution upon application to the Department of Agriculture, Washington, D. C.

The persimmon is probably the fruit most commonly used in the Orient, where it has been under cultivation for hundreds of years. Mr. Dorsett and the late J. H. Dorsett found trees in the Ming Tombs region northwest of Peking which were reported to be 400 to 500 years old. Most of the mature trees averaged about 15 inches in diameter but some of the larger were as much as 68 inches in circumference. China and Japan have many varieties, which should be introduced for trial and culture here. The favorite variety in China is known as "ta shih tze," or large persimmon, which has a fruit that is "flattened, 2 to 3 inches long, and 4 to 5 inches in diameter, with an equatorial constriction near the base, and is of a rich golden yellow color, seedless, of excellent quality and, when fully ripe and soft, non-astringent." The other varieties are somewhat smaller, and vary in other features.

Mr. Dorsett describes the Chinese system of "open-air cold storage." The success of the system leads to believe that with American facilities for storage the fruit could be marketed the year round and shipped to all part of the world. To keep them through the winter the Chinese gather them in October, pile them in beds which are raised a little above the ground, let them freeze thoroughly, and keep them frozen until they are needed. When wanted they are simply put in the open or into a vessel of cold water and thawed slowly, and they are then as good as fully ripe fruit, as the freezing and thawing have removed all astringency. The fruit is transported to market when fresh in the autumn or when frozen in winter by men carrying the fruit in baskets to near-by railway stations and villages and also by camel and donkey trains to more distant points. The Chinese use the persimmons much as we use apples, and Mr. Dorsett says that "Americans and Europeans in China are generally fond of them, and with these foreigners the persimmon as a breakfast fruit is as popular as the grapefruit is in the United States."

With the freezing equipment in the United States and the refrigerated cars and ships available for transport, Mr. Dorsett believes the market season could be materially prolonged and American-grown oriental persimmons could be marketed around the world. "A careful survey of the persimmon industry in the Orient," he says, "appears to warrant the statement that this fruit deserves a more prominent place in American horticulture," and "efforts should be made to introduce as many species and varieties as possible for use in experimental tests, study and plant breeding."

Nearing the Half Century Mark



IN 1882—the year the Glen Saint Mary Nurseries were founded—the total citrus crop movement out of the state of Florida did not exceed a million boxes. Florida grapefruit were practically unknown; certainly they did not constitute a commercial crop.

Today, Florida's citrus crop is returning no less than \$50,000,000 a year.

Paralleling the growth of this wonderful industry has been the growth of our own nurseries, today not only the oldest but the largest citrus nurseries in the world. This growth can be attributed to but one thing:

There has been an ever-increasing, consistent demand for Glen-Grown citrus stock, because it has proven throughout the years to be a stock that makes good in every respect!

Entering upon our 47th year of service to the grove owners and operators of Florida, we pledge anew conscientious, intelligent cooperation, and hope that they will discuss with us any phase of the industry in which we can assist.

Every Glen-Grown tree is tested and certified. We know what this stock will do—and guarantee it.

Perhaps you are wondering whether or not to employ artificial drainage. Our soil experts will be glad to place their knowledge and facilities at your disposal.

If you are interested in growing quality fruit—if you want greater citrus profits—write for our new, free book that every one interested in citrus fruits should have.

Glen Saint Mary Nurseries Co.

ORLANDO WINTER HAVEN TAMPA

"GLEN TREES ARE GUARANTEED"

"Please Say You Saw It In The Citrus Industry"

IMPRESSIONS

By The Impressionist

The amended state traffic law which now prohibits the new Fords being driven at less than fifty miles per hour seems to be working out to the satisfaction of all.

A couple of bucketsful of dropped oranges or grapefruit spilled about the chicken yard daily in fall or early winter stimulate the layers more than a barrel of poultry tonic, in our opinion. It is best to use fresh drops and split each in half with a hatchet.

We read with great interest and considerable comfort a long article in a northern fruit trade paper giving hearty approval to the Clearing House advertising campaign. Then we glanced at the "by line," and discovered it had been written by an employee of the advertising agency which holds the contract for that work. Oh shucks! 'Twas ever thus.

Then later we wondered at the emphasis upon "So cool and refreshing," in the center spread in colors boosting grapefruit juice, which came upon a snowbound North in the Saturday Evening Post of January 19.

Speaking of publications, Liberty has paid us quite a compliment. It was purely unconscious, however. We doubt if James M. Patterson or Robert R. McCormick ever heard of THE CITRUS INDUSTRY. If so, it must have been from their former associate S. E. Thomason, now the publisher of the Tampa Tribune; and if so, they probably forgot it promptly. However, not long ago they announced that the size of Liberty was to be changed; that after considerable scientific investigation they had decided to use a smaller size page, as being easier for subscribers to read and to handle, and affording greater value to advertisers. Then when Liberty appeared in its new size, lo and behold, it is the same size as THE CITRUS INDUSTRY.

Every now and then inspired winter visitors get into print in Florida newspapers giving citrus marketing advice gratis. Generally they tell us we need this or that facility which California utilizes, so they say, and

we do not. If we only had, or used, this or that, we'd be O.K., they opine. Some one should try syndicating some of this stuff to California papers in the citrus belt. It would be voted funnier than Will Rogers' best. To date no one has recommended that Florida must have mountains with snow on them, if Florida is to get by with her citrus selling. We wonder why? For California actually has the mountains, and numerous of these other things exist only in the imaginations of those being interviewed.

And of all those who prate to us of California, why is it that none tell us of the hundreds, nay thousands, of acres of California citrus properties which in the past twenty years have either been cut clear back and rebudded to the standardized navels or Valencias, or dug up by the roots to get rid of obnoxious rootstocks. If you who read these lines ever have contact with Professor Barrett at the California Experiment Station ask him about that. He will talk frankly and outright.

Our impression is that if the Florida Experiment Station ever advises any Florida grove owner to dig out ten or twenty acres of bearing citrus trees, the Board of Control had better sell the Experiment Station at auction pronto. For it will probably be dynamited in short order.

As chairman of the State Road Department Robert W. Bentley of Bradenton suits us, as Bob Bentley would suit us in any place of honor on up to President. During the long years that he was managing editor of the Tampa Tribune under W. F. Stovall, Bob Bentley, himself a grove owner, gave most careful, impartial and intelligent attention to things citrus. It was Bob Bentley who with us caused the Compulsory Spraying Law to be introduced in the 1921 Legislature. Not that we expected it to pass then, but by way of educational work to pave the way for its possible passage about 1947.

Talking to W. E. (Will) Lee, the "Citrus wizard" of Plant City and Tampa, and we compliment him upon

his improved physical appearance. "And why not," he queries. "I quit real work about five years ago. Since then I've gone up from 128 to 175 pounds; and that naturally makes me look better."

This is a sad paragraph, written in sadness. It is sent to the printers to take the place of a paragraph earlier written in a joshing and congratulatory vein anent the fifty-eighth celebration of the wedding of our very good friends Mr. and Mrs. J. P. Mace of Lake Helen. Since that time death has taken both parties to that wonderful marital partnership. We are missing two fine friends, and the citrus industry has lost in J. P. Mace one of its old-line leaders. To Loring Mace and Mrs. Marjorie Oates: sincerest sympathy.

The Florida Orange Festival at Winter Haven . . . The former county event this year with statewide aspect and participation . . . Splendid fruit exhibits from many sections . . . Attractive and artistic booths and decorations . . . We feel a real pride in the affair, being listed as a member of the State Committee and the work having all been done by others . . . We didn't hit a lick . . . A new location that's a big improvement over the old one . . . The whole show nicely housed . . . An average attendance of over ten thousand a day, and all of 'em going away boosters . . . Lots of notables too to be noted . . . Senator John S. Taylor of Largo, really improved by his losing race for governor . . . Doc Mackenzie of Leesburg, who is a man of few words and had told the morning meeting so in less than an hour . . . MAJOR General Albert H. Blanding of the Exchange, if you still address him as a Brigadier you are out of date . . . Judge Allen E. Walker, president of the Clearing House, who wouldn't swap places even with Al Smith . . . Lem. R. Woods of Tampa accompanied by C. T. Melvin general manager of the Gulf Fertilizer Company; the years are dealing kindly with Lem Woods . . . J. A. Caldwell, the crate magnate of Lake Wales, who has been losing a lot of sleep due to the infer-

Continued on page 24

BLUE GOOSE NEWS

Monthly News of American Fruit Growers Inc.

Edited by The Growers Service Department



VOLUME 3.—No. 3

ORLANDO, FLORIDA, FEBRUARY 1, 1929

PAGE 1

GETTING THE MESSAGE OVER BY RADIO ROUTE

Broadcasting of the American Fruit Growers over the Red Network continues most resultful. The time at which given (10:15 a.m.) is most advantageous in reaching housewives who are potential purchasers, but because of radio idiosyncrasies this hour makes it possible for but few Florida listeners to catch the broadcasts from the, to them, distant stations. Therefore the following brief extracts from the broadcast of Friday morning February 1 are given for the information of readers:

Mr. Havrilla: "The American Fruit Growers Inc. take us back of the scenes of the great wholesale fruit and vegetable markets. Through their market expert, Colonel L. Brown, we are told buying secrets that save money and particularly what's best in the market. Colonel Brown—who, by the way, was formerly associated with the Department of Agriculture—is right here now. What's that you have Colonel? Look's to me you've been doing some early marketing yourself."

Colonel Brown: "That's just what I have been doing—and DON'T YOU EAT any of those Winesap apples till I've finished my Market Tips! (Laughs)."

"First let me thank all of you who sent such helpful replies to my letter asking for comments on the Blue Goose Buying Guide. It is particularly gratifying to know that so many women are finding the Guide a really valuable aid in their daily marketing. Some say they have saved enough money out of their regular food allowances, after following the advice of this unique book, to buy personal things such as hats and gloves. Others remark that they feel so much more satisfied with themselves now that they can go into a store and select fruits and vegetables with some definite knowledge of signs of quality."

"One reply in particular—I've got

EXPORT SHIPMENTS SHOW NICE INCREASE

The present season undoubtedly sets a record for export grapefruit shipments by the Orlando Division of the American Fruit Growers Inc. Gratifying evidence of the effectiveness of Vice-President William H. Baggs recent European tour is to be found in considerably increased shipments of this season to every point in the British Isles and on the Continent where the distribution of Florida Blue Goose grapefruit centers

The American Fruit Growers Inc. was the first shipping concern handling Florida fruit to establish a continuous export business upon a quantity basis. For the last several years the business has been pushed consistently until Blue Goose grapefruit are served in all the leading British and Continental hotels and restaurants; and are for sale in all the principal cities in those shops catering to the better class of trade.

Most recent effort has been toward the expansion of sales into smaller places where distribution can be economically had. There is excellent evidence of the success of this effort. Almost every boat sailing from both New York and Jacksonville recently has carried its quota of Blue Goose grapefruit for waiting customers abroad.

it right here now—brought me an interesting idea I'd like to have all of you know. It's from Mrs. Jennie N. Parkinson, Director of the Albany School of Cookery, 12 Watervliet Avenue, Albany, New York. Mrs. Parkinson says that the Blue Goose Buying Guide has been of splendid help in her school work as well as in her marketing. Here—let me read her letter to you:

"My students have formed a club and we listen in each Friday morning and then discuss the Blue Goose talk in our class. For this reason, I wonder if I could have 75 copies of

Continued on page 2

EXTREME COLD HOLDS UP FRUIT DISTRIBUTION

The month of January was featured by some of the worst weather of recent years over the larger part of the area of the United States in which the Florida citrus crop is distributed. In consequence distribution suffered, and all marketing operations were handicapped severely. Extreme cold with recurrent blizzards kept hundreds of thousands of housewives housebound for the major part of the month over a very large area. Movement of perishable foodstuffs into and away from the centers of distribution was for the same reasons attended with great difficulty and consequently greatly restricted. On many days it was impossible because of the cold to hold auction sales in the larger markets.

As a natural result the consumption of citrus fruits was considerably curtailed; and it became impossible therefore, in face of the constantly abundant available supplies, to conduct marketing operations with any degree of satisfaction. Because of such abnormal conditions the markets at no time had opportunity to clean up properly the available citrus supplies, even with the restricted shipping programs then in effect, and there was naturally resulting unsatisfactory effects upon prices.

With an overabundance of small size oranges recent weeks have seen a very wide disparity in prices paid in the auction markets as between the sought-for larger sizes and the small ones. This was true in the case of both Florida and California. Fruit from the Pacific slope also has been running heavily to the smaller sizes.

Supplies have been plentiful throughout January. The week ending January 12 showed a combined movement of oranges from both Florida and California of 3,076 carloads, as against the five year average of 2,093 carloads for that week. Shipments after that date were lighter.

Continued on page 2

BLUE GOOSE NEWS

OFFICIAL publication of the American Fruit Growers Inc., Growers Service Department, published the first of each month in the interest of the citrus growers of the state of Florida.

EDITORIAL ROOMS
502 Yowell-Drew Building
ORLANDO, FLORIDA



J. P. MACE

The sudden death of J. P. Mace at his home in Lake Helen came as a shock to his many friends in citrus circles. Forty-three years ago Mr. Mace came from Cincinnati to Lake Helen and thereafter continuously engaged in citrus growing and shipping. He was one of the noteworthy figures in the industry; respected for his knowledge and experience; beloved for his fine character and equable temperament. The sudden passing of Mrs. Mace upon the day of her husband's funeral was an added shock to relatives and friends.

At the beginning of the present season J. P. Mace & Son discontinued as special shippers through the American Fruit Growers Inc., and their packing house at Lake Helen was leased to Volusia Growers Inc., an affiliation of the American Fruit Growers Inc. Mr. J. P. Mace though in his eighty-second year continued to look after his affairs and to assist in the business of the packing house. He was in the Orlando offices only a brief time before his death, and was for his age apparently in the best of health. His friends in the organization of the American Fruit Growers Inc. were many and sincere; and are grieved at his sudden passing.

Concerning his life the DeLand News has said: "A sterling character, a kindly and genial disposition, a good citizen; a kind husband and a loving father and grandfather. What more could be said of any man?"

Adv.

GETTING THE MESSAGE OVER BY RADIO ROUTE

Continued from page 1

the Guide for distribution among the class. They would be a great help, and we could follow your talks more closely. Your book is splendid and is just what women have needed for a long time. It is work in the right direction.

"I want to thank Mrs. Parkinson right now for her interest and the idea her letter conveys. This plan of the Albany School is such a good one that I am going to ask all of you to adopt it at least for this morning—this is, all of you who have already received your copies of the Guide and have it handy. I won't begin this morning's talk on February Market Tips until you've had a chance to locate your Guide. In the meantime, to those who haven't yet written for it, here is a quick description of this unique book.

"So far as I know—and I have been in marketing work for many years with the Department of Agriculture—there has never been any sort of information in book form that would help the housewife with her marketing until the American Fruit Growers asked me to compile the Blue Goose Buying Guide. This book tells the important quality signs you should look for when buying almost every kind of fruit and vegetable grown. It shows you how to get the best—and save money at the same time. The information is set forth in an easy-to-follow, A-B-C fashion. Over 90 illustrations make the text graphic. And the American Fruit Growers Inc. offer it to you absolutely free of charge. Make a note to write for your copy.

"And by the way, make a mental note, too, to look for the Blue Goose trade-mark when you shop. It's the big best identifying mark of quality the American Fruit Growers Inc. can give to fruits and vegetables.

* * * * *

"It seems nature has already (whether we believe it or not) enlisted on our side, for she has been more than lavish this month with her supplies of citrus fruits. Your family physician will tell you how important it is—if you are down with the flu, recuperating from it, or doing your best to escape it, how important it is to drink plenty of orange juice. In fact, eat all you want of both oranges and grapefruit, for they have beneficial tonic effect on weakened systems, supplying the much needed

health-protecting Vitamin C as well as Vitamin B which aids both appetite and digestion.

"Try a grapefruit course before dinner tonight. At this season of the year, grapefruit are well matured. They won't bankrupt your budget. And they're at their best for flavor.

"Just a few pointers before you buy. I have three grapefruit here, all bought this morning at the Washington Market. All are the same size, but—they differ widely in appearance. How does appearance effect eating quality? Not one bit: Many people do judge grapefruit by the color and smoothness of the skin and so grapefruit is graded accordingly when it is packed for market. One of the specimens I bought this morning is a Bright, the highest grade, because it is clean, smooth fruit; the second specimen is a Golden, the next lower grade because of its deeper color and less smooth skin; the third specimen is quite rusty looking and grades as a Russet. Yet—I've cut them in half to see—all three of them are of the same flavor and eating quality.

So when you purchase grapefruit give more attention to the weight, and to the thinness of the skin than to color and smoothness. Forget about appearances to a large extent and select thin skinned grapefruit that are heavy for their size if you want the very best eating quality, and I might add, flu-chasing fruit!

EXTREME COLD HOLDS UP FRUIT DISTRIBUTION

Continued from page 1

however.

Season's shipments though continue considerably in excess of those of the previous shipping season. To January 23 California had shipped 13,950 carloads of oranges as against 9,731 carloads last season. Florida to the same date had shipped 14,404 carloads of oranges as compared with 11,734 carloads shipped to that date last season. The combined total therefore to that time was approximately seven thousand carloads of oranges in excess of the previous season's orange shipments.

Florida's grapefruit shipments at the same time were approximately 1,500 carloads in excess of those of last season.

A most unsatisfactory phase of the marketing situation has been due to the very large amount of Florida fruit found to be scarred and disfigured as a result of earlier hurricane

damage. The proportion of such fruit has considerably exceeded the anticipations even of the best posted growers and shippers. The result has been a far larger proportion of second grade and a much smaller proportion of first grade fruit available for shipment from Florida than was desirable in view of general market conditions. Price levels, generally, have reflected the consequence of such a situation.

When these lines are written, at the first of February, much of the country still is gripped in unusually severe cold; but prospects for better weather conditions also hold hope for improved distribution, and a free flow of fruit into the hands of the consuming public. Available supplies apparently will continue ample for some time; but prospective increased consumption coupled with carefully regulated shipping programs should result in average results much more satisfactory to the growers. Our fruit is of excellent eating quality, and the public is showing a willingness to consume citrus fruits in greater quantities than ever before, so that there is justification for a reasonable degree of optimism in looking at the future.

FRANK L. SKELLY BACK

HOME FROM HOSPITAL

On January 31 Frank L. Skelly returned to his home in Orlando after forty-six weeks spent in a Jacksonville hospital where he underwent treatment for arthritis.

Physicians pronounce Mr. Skelly's recent progress very satisfactory, for which reason he was discharged from the hospital. However, so weakened and devastated was he by the illness that long convalescence at home must be necessary before he can be expected to resume duties actively at the Orlando offices.

Numbering friends in the industry as he does by the hundreds his family and associates are kept busy answering inquiries concerning his progress and condition; and it is with great gratification they are able now to report the encouraging words of attending physicians. "It is doubtful if the industry in Florida ever has shown so general and friendly interest in any one individual as it exhibits for Frank Skelly," said a prominent fruit factor recently; and that statement apparently is no exaggeration of the facts.

MRS. PARKER CREDITED WITH WINNING DESIGN

Mrs. J. W. Parker, wife of the manager of the American Fruit Growers' packing house at Oakhurst, was probably the happiest woman in Largo yesterday afternoon said the St. Petersburg Independent of January 18 in its account of the Pinellas County Fair; and continuing: She was the designer of the beautiful display of the American organization, which took first prize over all the packing house exhibits and also seven blue ribbons and two red ones, or second prizes, for individual boxes of fruit. The American Fruit Growers entered 10 boxes of citrus products and received nine awards.

The silver loving cup—made of real silver, lined with gold, and standing about 18 inches high—was shown with great pride by Mrs. Parker.

The outstanding feature of the display was an immense blue goose, advertising the Blue Goose brand, made of oranges wrapped in blue tissue. The legs and feet were constructed of kumquats, also wrapped in the same blue paper, and were more effective than those in the familiar poster in a solid color on a plane surface.

The awards won by the exhibit of the American Fruit Growers Inc. were as follows: Pineapple orange second; Valencia oranges, first; Dancy tangerine, first; Dancy tangerine, second; common grapefruit, first; Silver cluster grapefruit, first; Duncan grapefruit, first; McCarty grapefruit, first; Conners grapefruit, first.

WHY THE INCREASE IN EXPORT FREIGHT RATE?

With the growing importance of export business to Florida citrus growers, the recent increase in the rate on citrus fruits from Florida points to Jacksonville when for export is held by many to be most untimely.

J. R. Crenshaw, traffic manager of the American Fruit Growers Inc., Orlando, calls attention to the fact that on November 9 last the rate on citrus fruits for export from Orlando to Jacksonville was advanced to thirty-nine cents per box. The former rate for export was thirty-three cents per box. The added cost thus is six cents per box. Insertion of this change in the new tariff was without notice and largely escaped the attention of Florida shippers until too late for an effective protest. It was

not protested by the Growers and Shippers League.

When there was no export business via Jacksonville worth mentioning the rate was 33 cents. As soon as this Florida port begins to develop as an export factor, as it logically should, the rate is raised six cents per box or nearly nineteen per cent. To ship a carload of fruit to a Jacksonville fruit concern in intra-state movement for consumption at that point still costs 24½ cents per box. Interested growers and shippers are inquiring as to why the additional 14½ cents freight charges on each box of fruit when sent abroad?

Wife (looking at husband's noticeable beard): "Why didn't you shave?"

Husband: "I did."

Wife: "When?"

Hubby: "Just after you said you were ready."—Tawney Kat.

"Is that fellow you dated me for tonight a good looker?"

"I'll say he is—he's a detective."—Boston Beanpot.

Bill: "Was it good liquor?"

Hugh: "Certainly. It came from contented bootleggers."—U of Wash. Columns.

"Say, Mike, 've been sitting here for an hour and this vanishing cream hasn't moved yet."—Pitt Panther.

Rhoda: "Do you know how to make a peach cordial?"

Russ: "Sure, send her a box of candy."—Ohio State Sun Dial.

Alkali Ike: "What happened to the tenderfoot stranger wot was here last week?"

Texas Pete: "Poor feller. The second morning he was here he wuz brushin' his teeth with some of that foamy tooth paste and one of the boys thought he had hydrophobia and shot him."—Okla. Whirlwind.

"Is he conceited?"

"Conceited? Every time he hears a clap of thunder he runs to the window and takes a bow."—Denison Flamingo.

"So he is inherently dishonest?"

"Well, they say he was born with a silver spoon in his mouth but it had a hotel name on it."—California Pelican.

UNIFORMLY



THE BEST

For the Service Of the Growers

Each year witnesses an enlargement of our facilities to serve the citrus growers of Florida. From a very modest beginning eight years ago these have grown until now, in addition to the houses of certain private shippers which accept no outside business, owned or affiliated packing houses are in operation at the following points:

ALVA	LAKE WALES
CITRA	LEESBURG
COCOA	MAITLAND
CRESCENT CITY	MIMS
DE LAND	NEW SMYRNA
DE LEON SPRINGS	OAKHURST
FELLSMERE	ODESSA
FORT OGDEN	PALMETTO
FORT PIERCE	PALM HARBOR
GRAYS WHARF	VALRICO
GOULDS	VERO BEACH
HAINES CITY	WABASSO
LAKE JEM	WEIRSDALE
LAKE HELEN	WEST FROSTPROOF
LAKELAND	WINTER HAVEN

American Fruit Growers Inc.

Orlando, Florida

DEPENDABLE



QUALITY

Jaffa Orange Developments

A recent number of "The Market Grower & Salesman & Fruit Trader" states that a correspondent of the "South African Fruit Exporter" says that the development of the land at Jaffa for agriculture and fruit growing has forced values up at a rapid rate.

He states further that at one time the orange gardens existed generally in the town of Jaffa itself at the Tel Aviv end, but these gardens are rapidly disappearing, and buildings are being erected on the sites. As a consequence, the orchards are developing farther out, but the majority are within a 10-15-mile radius. They are scattered about, some being considerable distances apart, and in this respect are unlike those in Spain.

The largest concentration of orchards seem to be those of the Jewish colonies at Petach-Tikvah, Richon le Zion and Ness Ziona. These colonies themselves are some distance apart from each other, but they appear to be very flourishing. There are very few individual Jewish ship-

pers, the great majority marketing their oranges through the Pardess Co-operative Society, each member having a number. There is no pool in this association, but each member receives the price his fruit realizes at the sale as it is catalogued under his number, and account sales are rendered accordingly. Each member also selects his own broker to sell his fruit. The society controls about 300,000 cases at present, with a probable increase during the next two or three years to 500,000.

With regard to the gardens owned and run by Moslems, those visited appear to be kept in excellent condition. There is no society or organization of Moslems for operating gardens or marketing the fruit. Each works more or less on his own. The principal Moslem owners of gardens make purchases from small holders. There are many instances of growers having an output of around 10,000 to 15,000 cases, and by making extra purchases increase their interests to 30,000 and 40,000 cases. There are, of course, the merchants who operate in a very similar manner to the packers in Spain, namely, buying oranges

at sight, or per case, but who do not grow oranges themselves.

The musselman operator in oranges whether he be grower or merchant, requires financial assistance, and the position here is much the same as in South Africa and Spain. Provided that finance is only given to the best type of operator, there does not appear to be any undue risk. There are "shady" clients in the business, of course, just as in any other country, but it is not difficult to avoid this type, particularly with a Moslem agent of standing and integrity. The best type of Moslem business man in Jaffa is very jealous of his honor in business dealings, and it would be due to sheer misfortune if he were unable at any time to meet his liabilities. Like a good many of the Spanish packers, their main trouble is bad markets, and although fulfilling their contracts as to the number of cases shipped against the blank advance received, there might at times be deficits. Quite a few in the past have had deficits owing to the above cause, but have settled subsequently when the markets have been favourable.

Natural Fruit Diet Explains Immunity of Monks From "Flu"

The almost exclusive use of natural foods, such as fruits and vegetables, explains the apparently complete immunity from influenza enjoyed by the Carthusian monks at Crawford, Surrey, England, in recent months, medical authorities have decided.

A particularly violent form of "flu" raged some time ago through the community in which the monastery is situated. Despite the fact that it was a big contagious form, as well, the monks were completely free from attack, although they went about the town constantly and worked among the stricken inhabitants.

Health authorities were puzzled, medical journals discussed the matter at length and the inhabitants of the locality were frankly superstitious and awe-stricken. The health experts, however, began a quiet study of the matter, and the announcement that the natural diet of the monks, aided by lives free from all excesses, was believed to be the cause of their immunity, followed. The doctors then began to apply the principles of diet practiced at the monastery to others

in the community, and before long a considerable improvement in the influenza condition became apparent.

The monks, further research brought out, had been totally immune from tuberculosis and singularly free from all sorts of disease and ill health for many years. Their physical vigor, too, was remarkable.

The value of fruits in keeping health, long has been known to physicians and experts on matters of diet, of course, but its importance is becoming recognized more generally all the time. Fresh fruits always are valuable parts of the diet, whether for invalid or robust person, and citrus fruits, particularly oranges, lemons and grapefruit, not only have a relatively high content of vitamin-C in their fresh state but retain their antiscorbutic properties when dried properly.

Arctic explorers have profited by the latter fact in the last few years, taking with them a quantity of concentrated citrus juices or dried tablets made from citrus fruits. Commander Byrd took with him to the antarctic such a supply, intended to

help keep the members of his expedition in the best possible physical condition.

Though other forms of food may have the same health-giving properties, authorities say that availability, ease of preparation and palatability of fruits, compared to cabbages or spinach, for example, make them more valuable in those ways. Sugars of fruits, too, are the most easily digested of all sugars and are practically ready for immediate absorption by the system.

Florida dairymen ought not purchase hay, but if they do, they might save a lot of money by getting acquainted with the grades and terms used to designate the grades of hay, as defined by the United States Department of Agriculture.

The highest yielding variety of oats for Florida farmers is Fulghum. In tests carried on by the Florida Experiment Station last year this variety gave a considerable increase over others tried.

Texas Green Fruit Law

From the Valley Farmer, Mercedes, Texas

The meeting of growers and shippers held at Mercedes on January 10 did not bring out nearly the number of interested growers and shippers which were expected. Many of those present aired their views regarding matters more or less pertinent to the subject for which the meeting was called. There was little unanimity in discussion, but no opposition to speak of came up in the voting.

The season has not been good for grapefruit; all Valley growers are not aware of the fact that this has been a late season everywhere else in this country where citrus fruit is grown—a backward season one might better describe it. We go by dates, not by seasons. As one grower put it in talking to the writer, the present way of testing in a backward season is all wrong. "It is human nature," he says, "for the grower to pick a dozen or so of his most matured fruit for the test. Trees do not mature their fruit all at one time by any means; and at the beginning of the season, especially, there is always a tendency for some fruit to be green even though it has passed the inspector's test for maturity. As a matter of fact it never did pass the inspector's test. A few of the most mature fruit in the orchard did, but what are twelve or twenty grapefruit compared with the number which go to make up a carload? They roll to market in a hurry—everybody is in a hurry to get the first shipments on the market; look at the big money there is in it for the fortunate grower! The commission man or buyer is in a stew of a hurry; he wants to have the credit of obtaining the big prices; it means publicity and more trade for him. These are the things which should be considered."

This was a backward season everywhere. Florida papers admit the many complaints received by shippers as a result of the "immature fruit" which has left Florida groves this season. But Florida managed to get a great deal of her fruit on the market before the Valley got started, so buyers were naturally a little balky; and when some of the Valley fruit was found to be "green" it worked great harm on our growers in the matter of prices.

It is not, however, a reason why growers and shippers should feel discouraged. This was just a backward season. All producers of fruit of any

kind have their backward seasons. Next season there might not be a single complaint either in the Valley or in Florida regarding the immaturity of citrus fruit shipped to market.

The following suggestions have been duly drawn up by the committee to serve as guide in any subsequent legislation regarding amendments to the present green-fruit law in force.

No. 1. That all grapefruit or oranges shipped into the State of Texas be obliged to comply with the requirements of our Green Fruit Law, on test, or be destroyed.

No. 2. That provisions be made for testing of fruit at jobbing or commission houses, warehouses, or wherever found as well as the packing houses.

No. 3. The adoption of a sliding scale of requirements under the maturity test as applied to the testing of the early seedy varieties of grapefruit, the sliding scale to be worked out by the Texas State Department of Agriculture from our maturity test experience over the last two years.

No. 4. That a two and a half cent stamp tax per box be assessed instead of the present one and one-half cent tax, but that the Legislature make a \$15,000 appropriation for two years for the use of the State Agricultural Department in enforcing the green fruit law, above to also apply to fruit shipped into state.

No. 5. That all maturity tests be made as the fruit is received into the packing houses. In the event that any fruit fails to come up to the maturity requirements as it is received, a hold-over period, not to exceed 72 hours, will be allowed for said fruit to come up to test.

The matter of grading was discussed thoroughly, but no definite form of action taken, which matter, however, will undoubtedly be further discussed at the next committee meeting.

POSSIBLE TO HAVE GREEN LAWNS ALL WINTER IN FLA.

Having a nice green lawn in the fall and winter is largely a matter of finding out that it can be done, declares C. R. Enlow, assistant agronomist, forage crops office of the United States Department of Agriculture, who is located at the Florida

Experiment Station.

It is not at all difficult to have a nice green lawn in Florida all the winter, Mr. Enlow says. The way to do it is to seed a winter grass on the present sod. The most popular grass for this purpose is Italian rye grass, although Kentucky blue grass or red top will do all right.

The practice of seeding a winter grass on the lawn is becoming more general each year, according to Mr. Enlow. The grasses recommended for this are grown in the summer farther north, but make a good growth during the winter in Florida. They die down in the spring and then the St. Augustine or centipede takes possession again.

Italian rye grass is recommended for the winter grass because it comes up in two or three days after planting, makes a vigorous growth, stands tramping, has a pleasant color, and remains green until spring.

In selecting seed of any of these grasses for winter planting it is important to get seed that will germinate well and that are free of weed seed, cautions Mr. Enlow. Buying seed from a responsible firm is the best safeguard.

Four to six pounds of Italian rye grass is enough for 1,000 square feet of lawn space. This is seeded directly on the lawn without any preparation. Then a light top dressing of soil should be put on to insure germination. It is recommended that the ground be kept moist until the seed

Continued on page 26



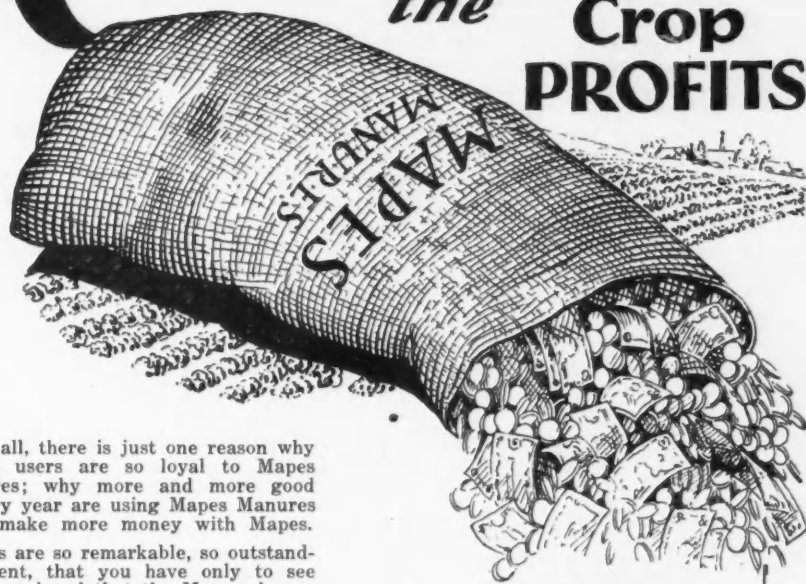
Beautify Your Home Grounds

Visit us at Oneco, or write for free advisory service. Over 45 years experience is yours for the asking. Free catalog on request.

Reasoner Brothers'
ROYAL PALM NURSERIES
Oneco, Florida

COMPARE

the Crop PROFITS



AFTER all, there is just one reason why Mapes users are so loyal to Mapes Manures; why more and more good farmers every year are using Mapes Manures—they can make more money with Mapes.

Mapes results are so remarkable, so outstanding, so evident, that you have only to see them to be convinced that the Mapes slogan, "COST LITTLE MORE—WORTH MUCH MORE", is a modest statement of the true worth of Mapes Manures.

Mapes Manures have always produced outstanding results because we find out from the crop what materials it likes best and we put these materials into Mapes. Mapes Manures are made to grow good crops—not to sell at a price. They are first made right, then priced as low as possible.

Try Mapes this year. Compare the results—yield, quality, profits—with the results from any other fertilizer you can buy.

The Mapes System of Fertilization

The Mapes System of Fertilization is being followed by many of the most successful citrus growers in Florida. It is based on many years of experience. It is simple and easy to follow. Under this system you feed your trees at the right time, with the right fertilizer and in the right quantity for maximum economical and profitable production. One of the very important advantages of Mapes Manures is that they may be applied liberally, without danger of tree injury, because they are made from the choicest sources of plant food obtainable.

Write today for complete information about Mapes Fertilizers and the Mapes System of Fertilization. Also, be sure to get our new series of Citrus Leaflets. They're free for the asking. Use the coupon below.

The Mapes Formula & Peruvian Guano Co.

270 Madison Ave., New York City, N. Y.
Hamilton Woodruff, Branch Mgr. Jacksonville, Fla.



.....Be sure to get this new series of leaflets.....

We are issuing a new series of leaflets which will tell you each month about the care and fertilization of your grove. These leaflets are designed to help you to secure greater production and greater profits from your grove. They are free for the asking. Just fill out the coupon below and mail today.

The Mapes Formula & Peruvian Guano Co.,
Dept. C-4, Jacksonville, Fla.

Please add my name to your mailing list so that I will receive the new leaflets on Citrus Culture. Also send me complete information about Mapes Manures. It is understood this does not obligate me in any manner.

My grove consists of _____ bearing trees and _____ young trees. My grove is located at _____

My name is _____

My address is _____

MAPES

Manures

cost little more --- worth much more

"Please Say You Saw It In The Citrus Industry"

Watson Tells Growers to Get Rid of Aphids Before They Multiply

How citrus growers of the state can save much time and expense in getting rid of the few scattering colonies of aphids in their groves during the first part of February was explained in a radio talk over WRUF recently by J. R. Watson, entomologist of the Florida Experiment Station.

For this cleanup nothing is better than a bucket containing a gallon or two of water, Mr. Watson said. For each gallon put in a tablespoonful of nicotine sulphate and an ounce or two of soap. With this bucket full of insecticide go through the grove, particularly the young trees, and dip into the bucket all new growth showing the presence of aphids. Infested growth can readily be recognized by the characteristically curled leaves, he said.

At this time of year the growth is mostly out on the end of the slender twigs, which can readily be bent over into the bucket of insecticide. If swished around in the bucket a bit, the twigs should be completely freed

of aphids. A few hours spent at this work for the next two weeks may well save the grower hundreds of dollars in time and material in the course of the next two months, Mr. Watson declared.

Citrus aphids have been rather scarce in groves during the winter, Mr. Watson informed his hearers. This was due to the rather continuous cold during December and the extreme drought of the late fall. However, since the warm weather of the latter part of January, new growth has started and aphids are making their appearance on this, he said. For this reason it will pay to keep close watch for them.

Aphids will not begin to fly in appreciable numbers until about the middle of March so that from now until the first of March practically all aphids in a grove will have been raised there. They will not fly in from outside to any great extent, so every grower will get the benefit of his cleanup irrespective of what his neighbor does.

IMPRESSIONS

Continued from page 16

nal noise made by oranges dropping on the ground . . . J. Curtis Robinson, general manager of the Clearing House, who would gladly swap places with Al Smith or any other white man . . . J. C. Swindell and Mrs. Swindell of Lakeland; and J. C. maintains he is now clear out of politice . . . R. J. (Dick) Keppler of De Land, who if he continues growing fruit a few years more will have as much money loaned out on mortgages as some other growers owe . . . E. G. (Ned) Stockton, the St. Louis investment banker whom we are toting about, and who gets lost from us every few minutes . . . We threaten to buy him a red cap and a bell . . . Edwin Pierce, who gives us one of those funny wooden grapefruit or orange "suckers" which you push into the blossom end of a fruit and then go back to first principles . . . George and Mrs. Keller of Mount Dora, who have just lost their beloved dog, Mutt, after a brief illness . . . Ed Hooker, advertising agency contact man attached to the Clearing House, who earns our approval by arguing stoutly in favor of the Florida winter cli-

mate with a third party who is strong for California . . . Lon Martin of Lake Wales who maintains we know personally more citrus growers than any other person in Florida, and tries to make us believe it . . . George Clements of Bartow, whom one naturally expects to meet most anywhere . . . Erle Wirt of Bartow, president of the Exchange, and Randall Chase of Chase & Co. trying to work surreptitiously on Clearing House affairs in spite of the occasion . . . Charley Kime of Orlando and "Brother Bill" of Somewhere, as usual earnestly . . . R. B. Woolfolk of Orlando, Pittsburgh, Lockport, N. Y., and the Imperial Valley, who kindly moves over to our table and keeps his record clear by buying lunch for Stockton, Pierce and ourself . . . C. W. (Joe) Lyons and A. M. (Archie) Pratt please note the foregoing . . . Form in line on the right, and you'll get your turn . . . This lunch buying championship ought to be settled . . . But there is no hurry as far as we are concerned . . . Nathan Mayo, who points to his record . . . Senator Pat Whitaker of Tampa, who points to Nathan Mayo . . . Too many of the great and the near-great of Winter

Haven and vicinity to mention without enlarging this issue . . . J. M. (Doc) Slattery of the Exchange Supply Co. at Tampa, who hasn't yet found his hat after fifteen years and still goes bareheaded . . . Ervin Springstead of Palmetto and George S. Becker of Nokomis out to see the show and the sights of a big city . . . William H. Mouser of Orlando, the hardest working individual in the cit-

PAINTER'S

Simon Pure Citrus

and

Gem Farm Crop
FERTILIZERS

ARE

"Time Tried and Crop
Tested"

Our Brands are the Acknowledged Standard by which Growers of Florida have judged all Fertilizers for nearly 40 years.

"Giving all we can for what we get instead of getting all we can for what we give" is the policy of

THE E. O. PAINTER
FERTILIZER CO.

Jacksonville, Florida

for
MELANOSE
AND SCALE

Apply VOLCK-Bordeaux combination for control of melanose as well as scale. This combination should be used until April. VOLCK is the oil spray with a guarantee analysis. Talk with your nearest VOLCK dealer about this improved method of producing bright fruit.

CALIFORNIA SPRAY-
CHEMICAL COMPANY
O. R. Blois, District Sales Mgr.
61 W. Jefferson St., Orlando, Fla.

VOLCK

The Scientific Insecticide

February, 1929

rus business . . . Motor boat races on Lake Silver at one end of the grounds . . . One-legged aviator hanging from a wing by his chewing gum overhead . . . La Bella Fatima, whom we first met at the Chicago World's Fair in 1893, on the Midway . . . Or the Pike, or what have you . . . Our right hand knows why President Coolidge abolished handshaking at the White House . . . Our shoes are suddenly full of feet . . . We call it a day and embark for our wife's house seventy-five miles away.

TRINIDAD FRUIT SMALL FACTOR IN U. S. MARKET

Florida citrus growers have little to fear from competition by growers of citrus on the island of Trinidad, R. O. Williams, superintendent of the botanical gardens at Port of Spain, who visited the South Florida Fair, said in discussing the crops of Trinidad and Florida.

Citrus growers of Trinidad, now getting on their feet after destruction of their groves by disease in 1917, are looking to Canada and England as their principal markets, in full realization that distance is a formidable barrier.

Citrus will never be more than a minor crop, Mr. Williams said, and with expected continued success in production of cocoa, the island's principal crop, most of the agricultural effort will continue to be in that direction. An acre's crop of cocoa can be put into four sacks of 200 pounds each, while an acre's citrus crop weighs about 15 tons, a considerable handicap in freight tonnage.

Mr. Williams, accompanied by Mrs. Williams, arrived in Florida Jan. 5. He has been visiting the principal picking centers and packing houses, picking up information.

NEW U. S. ESTIMATE PUTS CITRUS CROP AT 20,000,000 BOXES

A total commercial production of 20,000,000 boxes of citrus fruit is shown for Florida for the current season in revised figures just announced by the bureau of agricultural economics of the United States department of agriculture Orlando.

The total, the figures show, includes 8,000,000 boxes of grapefruit and 12,000,000 boxes of oranges. The estimates were for fruit to move by rail and boat and includes express. Tangerines, it was stated, are included with oranges.

"This revision is based on ship-

THE CITRUS INDUSTRY

ments to date and on the amount of fruit still remaining on trees," the announcement says. "While the crops of the last three seasons have been comparatively light, the number of trees of bearing age has been steadily increasing.

"This season there was a good setting of fruit in all sections. The storms of August and September caused a heavy loss, especially to grapefruit and sizes of early and mid-season oranges have been running smaller than usual, but production still promises to run close to that of 1923-24, when shipments slightly exceeded 20,000,000 boxes."

More than 150 strains of pigeon

Twenty-five

peas were under observation of the agronomy department of the Florida Experiment Station last year. This crop can be used as forage, as feed for humans, and as a green manure crop.

Seven ordinary range steers made an average daily gain of 1.24 pounds each for 210 days, in feeding trials conducted at the Florida Experiment Station. The steers were pastured on a well-fertilized pasture and received no other feed except minerals.

Every child likes to have a place reserved especially for his toys and treasures. A small closet is an ideal place for such purposes.

When Citrus Aphids threaten /

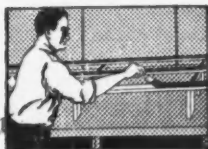


to injure your trees and crop, stop losses by spraying or dusting with "Black Leaf 40", the "Old Reliable". This protection costs but a few cents per tree.

AS A LIQUID SPRAY or in NICOTINE DUST for groves, truck crops and gardens, "Black Leaf 40" kills aphids and thrips, etc., both by contact and by its nicotine fumes.

To increase the effectiveness of oil sprays against citrus scales and mealy bug, add about 1/4 pint of "Black Leaf 40" to each hundred gallons of diluted oil spray. "BLACK LEAF 40" is the world's leading nicotine insecticide. Deadly to all soft-bodied sucking insects. Non-injurious to foliage. Ask your Experiment Station.

Dealers Sell "Black Leaf 40" in Several Package Sizes



Just "Paint" It On the Roosts

Kills lice on your entire flock, whether 50 birds or 5000. When chickens perch upon roosts that have been painted with "Black Leaf 40", fumes are slowly released that penetrate the feathers and kill the lice.

KILLS BY CONTACT AND FUMES

While the effectiveness of "Black Leaf 40" is primarily dependent upon direct contact (wetting), a secondary advantage is furnished by the "gassing" effects of the penetrating nicotine fumes set free in the spraying material. This two-fold action is an advantage not possessed by any non-volatile spraying solution.

"BLACK LEAF 40" CONTROLS POULTRY LICE

To rid your flock of lice only a small paint brush, a can of "Black Leaf 40" and a few minutes time for "painting" it on top of the roosts is required. Easy, effective, and cheap. Eliminates all individual handling of birds. Ask your Dealer for information or write us.



TOBACCO BY-PRODUCTS CHEMICAL CORPORATION, Inc.
Louisville, Kentucky

"Black Leaf 40"

40% Nicotine

"Please Say You Saw It in The Citrus Industry"

CITRUS COMMENTS

Continued from page 11
gen. It is a valuable soil element and has a distinct acid reaction in the soil. Other related materials.

There is reason to believe that important uses may develop for other materials because of their effect on fruitfulness, quality, fruit color, etc.

SYNTHETIC and **"BY-PRODUCT"** fertilizers have increased in variety and numbers. The highest percentages of plant food yet obtained are represented by such analysis as urea 46% nitrogen, nitrophoska 15-30-15 and other forms equally as high for the materials from which they are made.

POSSIBLE TO HAVE GREEN LAWNS ALL WINTER IN FLA.

Continued from page 22
have germinated, and it is a good idea to water the lawn during dry spells in the winter.

If the lawn has not been fertilized recently, an application of 8-4-4 fertilizer at the rate of 10 pounds per 1,000 square feet will help a lot. It may be put on just before or after the winter grass is seeded, but it is very important to have the grass dry when fertilizer is applied, to prevent burning.

An application of two or three pounds of sulphate of ammonia for each 1,000 square feet about once a month will keep the grass a beautiful dark green color and in vigorous growing condition.

CHAYOTE REPORTED GROWN IN SEVERAL COUNTIES IN STATE

Chayote
The chayote, a one seeded squash known in some marts of trade as the cactus squash, in others as the vegetable pear, is now fruiting abundantly in many counties in Florida, according to reports from county home demonstration agents to Miss Isabelle Thursby, marketing agent for the State Home Demonstration Department.

A native of Mexico, the chayote has become popular in many of the sub-tropical parts of the world. Mexicans, it is said, not only esteem the fruit of the vine, but find that the tuberous roots resemble the yam, and that the young shoots are delicious prepared as Americans prepare asparagus.

Many single vines in Florida have produced in a season from 200 to more than 2000 fruits, weighing from one to two pounds each. Plenty of room and one chayote fruit is all that the gardner needs to secure a plenti-

ful supply of it, it is said.

Miss Thursby states that the chayote is good to use fresh as an ingredient in a raw salad, is fine merely to eat, pepper and butter, or boiled, cooled and served either alone or with other vegetables in a salad with lettuce and mayonnaise or French dressing; fried, stuffed or baked with meats. They may be brined and made into sweet and sour pickles. As a "dilled" product it has no rival.

The chayote is best to use, some think, when about two thirds grown, when it can be used without peeling—that is, before the skin begins to toughen.

The word trips lightly on the ton-

gue as "shy-oaty" with the accent on the "oat." The seed is soft and must not be removed from the fruit for planting, the whole fruit being put in the ground, the stem end under the surface, the sprout just protruding. The roots and shoots both come from the stem end. Planting can take place any time in South Florida from fall until late spring,—covering with leaves or some kind of mulch in case of frost dangers.

In North Florida it is advisable to wait until frost hazards are over before placing in the ground. If once established it will spring up from the same root for many years.

Another Big House Adopts the Brogdex System

On Jan. 23rd the DeLand Packing Co. operating a 6-car plant at DeLand, adopted the Brogdex System.

The immediate benefit the DeLand Packing Co. will get will be the saving of icing charges. In their plant this will mean around \$500.00 a day if run to capacity.

But there are others advantages. The process improves the appearance of the fruit and when it arrives sound without being iced it has already demonstrated its better keeping qualities and will bring a better price. This will build a reputation for DeLand Packing Co. fruit and provide a profitable market for every box they pack.

Our Brogdex man will be glad to run a test in your house on your fruit to show you convincing proof of the effectiveness of the Brogdex Process in the control of blue mold and stem end rot.

Florida Brogdex Distributors, Inc.

B. C. SKINNER, Pres.

Dunedin, Florida

HOTEL HILLSBORO

Tampa, Fla.

TOP O' THE TOWN

European Plan, Fireproof 300 Rooms With Baths

THE CENTER OF TAMPA

DESTROY WEEDS NOW TO CONTROL THIRPS IN CITRUS GROVES

Prompt action on the part of citrus grower in the matter of destroying weeds in their groves early in January will pay big dividends in reducing the number of Florida flower thrips, says J. R. Watson, entomologist of the Florida Experiment Station.

The white-blossomed Spanish needle is a favorite breeding place for the progenitors of the thrips during winter. It often happens that a grower will mow or disc his grove and leave many of these weeds standing in out of the way places. In blossoms of these weeds thrips multiply by tens of thousands during the winter and swarm out to citrus blooms during the blooming period, Mr. Watson points out.

Thrips inflict two types of injury; destruction of bloom and scarring of the fruit. The first damage is not serious when there is an abundant bloom, but where the bloom is scanty thrips may seriously curtail the crop it has been found. The control of thrips has resulted in as much as a 300 percent increase in the amount of fruit on trees with a scanty bloom and a heavy infestation of thrips.

Fruit is scarred by the young. As soon as the petals and stamens of the citrus bloom drop most of the winged will fly away but the young have no wings and must stay. They feed upon the young orange and the thickened stem upon which the orange rests. If abundant enough they may cause the orange to drop, or may scar the fruit so seriously as to lower its grade at picking time.

The proper time to spray for control of thrips is just after the height of bloom, when the petals are beginning to fall. Contact sprays such as nicotine sulphate are used for this purpose. Since all trees in a grove do not bloom at the same time, spraying is an expensive and often unsatisfactory procedure for the control of thrips, Mr. Watson explains. This fact makes it doubly necessary to destroy all weeds on which the thrips may live and multiply during the winter.

The adult insect is about one twenty-fifth of an inch long, and is orange yellow in color. They do most harm when the weather is warm and dry.

When poaching eggs add a tablespoon of vinegar to the boiling water to prevent the whites from spreading.

Tone up your trees

They'll set a larger crop

QUICK acting nitrogen on citrus trees right now will insure a heavy early bloom and a good setting of early fruit. On trees that were in weakened condition when winter began, quick nitrogen is absolutely necessary to make a normal crop.

Chilean Nitrate is the quickest-acting nitrogen fertilizer. It goes to work at once—doesn't loaf on the job. Trees feed heavily on nitrogen during bud growth—be sure they have the nitrogen they need. It means more fruit—juicier, better flavored, higher sugar content. Ships better, too.

At Lucerne Park, Winter Garden, Fla., 15 twelve year old trees were fertilized with 10 lbs. Chilean Nitrate per tree, 10 lbs. acid phosphate, and 10 lbs. sulphate of potash. They produced 50% more fruit than an adjoining block of trees on which 50 lbs. per tree of a ready mixed fertilizer were used.

Free Fertilizer Book

Our new 44 page book "How to Use Chilean Nitrate of Soda" tells how to fertilize citrus and all other crops. It is free. Ask for Book No. 1, or tear out this part of this ad and mail it with your name and address.

Chilean Nitrate of Soda

EDUCATIONAL BUREAU



Orlando Bank & Trust Bldg.
Orlando, Florida

In writing please refer to ad No. F-25

DISTRIBUTION PROBLEMS NOT CONFINED TO FLORIDA

Continued from page 5

even nearer than London has to be paid for. Our Government when making the contract seemed to have missed this point.

The subject of the opening of new markets is one which one approaches with a certain amount of diffidence as it is a point on which opinions are likely to differ.

While the opening up of new markets is strongly advocated by the Government, the Exchange and the economists, it falls on the individual grower to stand the loss. It is all very well to talk of averages and to say that the difference has amounted to a few pence only per case. In individual instances it may mean shillings, not pence, and this loss, borne for the benefit of the industry as a whole, falls on a few individuals not only in the opening of new markets but in the reduction of the bulk sold in the established markets.

While realising that the Exchange is not in the position to undertake heavy financial liabilities, it might take over fruit at current market rates from growers for the sake of opening up new markets, so that any loss entailed would be shared by all and not by the few. Any profits accruing from this source could be devoted to further extension of markets.

If this policy were adopted the overseas representative would be responsible direct to the Exchange Executive for these ventures and not dependent on any individual. In this case a bolder and more successful policy could be undertaken.

In conclusion shippers should be reminded that the wider the distribution the slower will returns be in coming in—that is a necessary fact. This is not an excuse for past delays made in payment by the Exchange, but a caution to shippers to let their Salesmen have time to do their best for them.

It is always possible to get an immediate cash return—at a price.

EXPANSION OF THE ORANGE INDUSTRY IN PALESTINE

Continued from page 8

about L.P. 38,000 in credits in the last eighteen months from three credit institutions. No data is available as to the amount of credits which the farmers in this category were able to raise from other sources.

(2) Sons of colonists and experienced agricultural labourers, who are developing the groves in the vicinity

THE CITRUS INDUSTRY

of the old colonies. This category comprises: sons of colonists in Herzlia (28) an Rishn-le-Zion and Ness-Zion (36), the latter being subsidized by the P.J.C.A., also 23 agricultural labourers in Kfar Aharon and 37 in Nahalath Yehuda, all of them subsidized by the Palestine Zionist Executive. The total area planted by the growers of this category is 1,770 dunams, for which L.P. 24,460 were received from the various institutions, while an amount of L.P. 7,450 is needed to complete the groves.

(3) The third category consists of the following three groups: (a) Private plantation — settlement — and colonisation companies, who will themselves obtain the necessary cap-

ital. (b) Absentee owners who are having farmers or agricultural contractors in Palestine develop orange plantations for them. These undoubtedly will supply the funds required. (c) Residents of the new settlements such as Kfar Saba, Magdiel, Raanania, Bnei Brak and Herzli, who have planted 3,548 dunams and who have been subsidized by the P.Z.E. Their indebtedness amounting to L.P. 28,408, they will probably need about L.P. 60,000 more to bring their plantations to completion.

The total indebtedness of the above mentioned three categories amounts, therefore, to L.P. 90,808, and there will be needed no less than L.P. 80,000 to finish the groves. Concerted



Grow
LARGER AND
BETTER CROPS
BY USING THIS
BETTER FERTILIZER

Larger and better crops can be grown with NACO BRAND Fertilizer, for quality and yield are directly dependent on the right kind and amount of plant food available for your crop.

During the first 10 months of 1928, DOUBLE the amount of NACO BRAND Fertilizers were used in Florida than during the same period of 1927, and 1927 showed almost a similar increase over 1926.

Results in grove and field have made possible this remarkable record of progress, and more and more growers are learning of the extra profits that are to be made with this better fertilizer.

Decide now, that during 1929 you will use this better fertilizer and get the extra profits that are bound to come with increased quality and larger yield.

NITRATE  **AGENCIES**

1401-1405
LYNCH BUILDING

COMPANY

JACKSONVILLE
FLORIDA

February, 1929

action on the part of the agencies working in Palestine—both the colonization and the financial-economic—is required to cope with the problem.

It is also estimated that the area of 15,000 dunam of new Jewish groves during the development period could afford permanent employment for 500—800 Jewish hired agricultural labourers and to, after the groves begin to bear fruit, 1,000—1,200 permanent labourers and 2,000—2,500 temporary workers during the harvest season of 4 to 5 months.

* A dunam — approximately $\frac{1}{4}$ acre.—Ed.

† L.P.—Palestine pound; same value as £.

L.E.—Egyptian pound.—Ed.

STATE PLANT BOARD *glends* ALWAYS AT WAR WITH PLANT BOOTLEGGERS

More than one type of bootlegger exists in Florida, according to A. C. Brown, assistant quarantine inspector for the State Plant Board. The type in which Mr. Brown is especially interested is that group of people who smuggle plants into the state, and in this way jeopardize the whole horticultural industry of Florida.

The horticultural development of the state for the past 10 years might be traced by reading the files of the Plant Board inspectors during that time, states Mr. Brown. In 1919 and 1920 there was a great development of the avocado industry in the southern part of the state. An organized effort was made to smuggle Mexican avocado seeds into the state despite the fact that the seed from Mexico were under federal quarantine due to the presence in Mexico of the avocado weevil, a very destructive pest.

The next plant bootlegging era was in 1921-1924 when almost every grower in North and West Florida became interested in satsumas. There was a demand for trifoliate seed and stock and for satsuma buds from Pensacola to Jacksonville that far exceeded the supply, according to Mr. Brown. Again the bootleggers were called into service and for several years the efforts of the State Plant Board inspectors were directed towards keeping these contraband materials out of the state.

The next clash between the bootleggers and the Plant Board, as related by Mr. Brown, occurred during the boom days of 1924-1926. Coconut and royal palms were much in demand for ornamental purposes. Coconut trees from the West Indies

THE CITRUS INDUSTRY

were under quarantine from the Federal Horticultural Board and the State Plant Board, because of the presence of coconut bud rot, besides lesser diseases and insects. The bootlegger was again called into conference, says Mr. Brown, and while Plant Board inspectors did intercept many shipments of contraband nuts and trees, no doubt quite a few were smuggled, insects and all, into the state.

One of the latest reports of the activities of the plant bootleggers tells of the arrival of a man from Cuba recently with quite a few grape-

Twenty-nine

fruit. He gave a few samples to a grower living in the extreme Southern part of the state and proceeded to Sebring. Upon examination, it was found that the fruit was infested with worms. One fruit alone had seven maggots. It is assumed that the balance of the fruit, possibly infested with the West Indian fruit fly, was carried on to the Ridge section and scattered among people in that great citrus producing section.

Spuds Johnson says take care of a good cow and she will take care of you.



TRADE
DOW
MARK

DRY LIME SULPHUR

for the control of
Scab : Rust Mite : Red Spider : Scale Crawlers

DOW DRY LIME SULPHUR has two outstanding features which make it very popular with Florida growers—its high efficiency in pest control and its convenience in handling; two pounds of Dow Dry Lime Sulphur being recommended where one gallon 33 degree lime sulphur solution would be used.

OTHER DEPENDABLE PENINSULAR PRODUCTS
Emulso for White Fly and Scale. Derrisol for Aphids. Peninsular Calcium Caseinate for Oil Sprays. Niagara Dusts and Dusters. Hardie Sprayers.

PENINSULAR CHEMICAL COMPANY
TAMPA, FLORIDA

"Please Say You Saw It In The Citrus Industry"

CITRUS SURVEY IN THE

ORIENT REGION

Continued from page 7

heat unit. Japan is rather temperate than subtropic, and the Satsuma shows its wonderful fruit quality under such conditions, analogous to the case that the Satsuma grown in Alabama is far better than those raised in warmer part of Florida. But you will be quite surprised to find Washington navels in Japan where the humidity is as high as in Florida and the temperature lower than Riverside. The reason we find Washington navel oranges there is explained in this way: The Washington navel is the extreme sort of sweet orange which requires minimum heat unit; in other words, it is the earliest variety of all sweet oranges. Washington navel is a bud mutant quite similar to our Wase Satsumas requiring least amount of heat unit, the latter maturing one month earlier than Owari Satsuma. I found over 30 cases of independent bud mutants originating Wase characters. It is no wonder you have found not a single progressive bud mutant of Washington navel, because Washington navel is the highest form like our Wases, which is what the German scientist calls "Hoch Zucht," so far as the earliness is concerned. To obtain rich yield of Washington navel under humid conditions we have to train the tree almost to the point of dwarfing, checking the vegetative growth as far as possible. The Washington navel is not the early orange at all in the Satsuma country like Japan, and the fruits stored in the cool chambers for many months coming out to the market after the Satsuma fruits get scarce. The navel is followed by a grapefruit-like-race, "Natsu-daïdai," which is perhaps the latest maturing fruit, later than any variety of grapefruit, according to my recent observation made in Florida.

Now, keeping this information in your mind, how do you explain the fact of distinct geographic separation good at all in any other place than of these races. Sweet orange is no extreme south, with the conspicuous exception of Washington navel. Ponkan and Tankan are also no good at all outside of Chao chow, Chang chow and Formosa, almost lying on the same latitude. Tangerine is no good at all in any other place than Foochow. We tried it long years in Japan but never succeeded. King (or Kun-embo) is not good at all except in Luchu and there small mandarines are only skirting the northern limit of citrus area, except the line is pene-

THE CITRUS INDUSTRY

trated by extremely early kind, the Satsuma orange. If you go to the southern sweet orange line, no citrus fruit is good at all, except the lime, and from Philippine to India all tropical regions are lime countries and no citrus industry has ever developed. These citrus zones in the Far East show clear enough that the heat unit is the only essential factor which determines the economic variety. We find all kinds of edaphic differences, different distribution and amount of precipitations, wind factors, etc., but the race of citrus always finds its fittest place, just where it finds sufficient heat unit. You will notice how closely the latitude of Riverside fits in with the Japanese navel orange regions and how near Florida's pro-

ducing center (Polk county) approaches to King and tangerine regions of Asia. Of course, we do not know grapefruit and you do not know the true sweet orange (I mean Tinchang, the best variety of sweet orange), but careful scientists will be able to judge logically where such unknown races can be fitted in. We started grapefruit planting in Formosa and we believe it is correct.

I leave it to your study where Ponkan, Tankan and Tinchang will fit in, and wise solution of this question will mean to your country more progress and more improvement of citriculture.

Before concluding my talk I want to briefly explain the distribution of wild species of citrus in Eastern

February, 1929

Ripen, color, blanch with ETHYLENE

Increases profits—Saves time—Reduces losses



Inexpensive

Easy to use

All these advantages

1. Greatly reduces time required for ripening.
2. Prevents waste from rots and fungous growths.
3. Improves flavor.
4. Produces better color by more complete action on the green pigments.
5. Ripening and coloring go on simultaneously.
6. Makes possible the marketing of heretofore unknown tropical fruits.
7. Ripens and colors fruits and vegetables that mature late in the season.
8. Is inexpensive and easily used. Simple apparatus and little experience required.
9. Can be applied equally well to a few crates or a whole carload of fruit or vegetables.
10. Is neither injurious nor dangerous. Widely used. A proved success.

For information write to

CARBIDE AND CARBON CHEMICALS CORPORATION

30 East 42nd St., New York City

P. O. Box 596, Los Angeles, Calif.; 114 Sansome St., San Francisco, Calif.

Warehouses in Tampa, Jacksonville, Los Angeles and other principal cities

Unit of Union Carbide  and Carbon Corporation

"Please Say You Saw It In The Citrus Industry"

Asia. Many people think the genus citrus comprises only very few, say only 10 species; but I am able to enumerate through my extensive botanical study, at least 20 wild species of Citrus, three of Fortunella (kumquat) and about 200 species citrus relatives, growing wild. I have just finished my complete survey of citrus and citrus relatives of the world and you will find in any large herbaria of Europe and America that the specimens of this group are all nicely reclassified and well rearranged. Now, limiting our subject to citrus only, you will find (1) two conspicuous wild species in the Japanese territories, Citrus tachibana and C. depressa; (2) two others in the interior of China (Citrus junos and C. ichangensis), three more in China, C. microcarpa (— C. mitis), C. sunki and C. jonki (Cleopatra), the locality not determined; (3) three in tropical Asia, C. aurantifolia (the lime), C. lystrix, and C. macroptera. Shaddock, lemon and citron are also from the same region; (4) in eastern Himalaya another conspicuous species, C. indica and C. altipes grow wild, and both sweet and sour orange originated from this region.

Among minor species the following are distinctly wild:

1. C. taiwanica Tanaka and Shimada from Formosa.
2. C. miaray Wester from Mindanao and Malay islands.
3. C. Webbii Wester from Bontoc and other Philippine islands.
4. C. limonellus Hassk. from Java and Indochina.
5. C. upoluensis Tanaka and C. vitiensis Tanaka from South Sea Islands.
6. C. annamensis Tanaka from Indochina.
7. C. polyandra Tanaka from New Guinea, etc.

If you add to this list these commonly cultivated species like C. limetta (sweet lumia), C. bergamia (bergamot), C. deliciosa (Mediterranean mandarine), C. sinensis (sweet orange), C. Aurantium (sour orange), C. Limon (lemon), C. nobilis (King), C. medica (citron), C. grandis (shaddock), C. paradisi (grapefruit), C. unshiu (Satsuma), C. tangerina (tangerine), C. natsu-daidai (natsudaidai), C. limonia (Canton lemon), C. poonensis (Ponkan), C. tankan (Tankan), etc., the list of citrus species will number more than 35 and you will notice that the increase in the species list is inevitable if the close, botanical study makes further progress.

Now, I do not intend to scare you

Continued on page 36

How to Grow fine fruit

THE growing of quality fruit isn't altogether a question of pride—though that is worth something. Quality fruit means better prices and a readier market.

INCIDENTALLY, the same methods that produce higher quality in the crop make stronger, healthier trees and increase the value of the grove.

THE problem of the grower is really not so very difficult. He knows what percentage of his crop grades high. He knows how that percentage compares with the grading of other groves. He knows—or can find out, the methods used in groves producing better fruit than his—and more of it.

CITRUS trees are not contrary. They respond to definite treatment with definite results. When they do not perform satisfactorily, there is always a reason and it is usually simple to find out the reason. Almost always it lies in the quality and quantity of fertilizer.

CONSULT an ORANGE BELT field man. He knows the methods of the growers whose product grades "highest quality."

LYONS FERTILIZER CO.

Tampa



Florida

OFFICE

805 Citrus Exch. Bldg.

PLANT

35th St. and 4th Ave.

"QUALITY FERTILIZER FOR QUALITY FRUIT"

Composition of Fresh Fruits Shown in New Summary Tables

New summary tables on the chemical composition of fresh fruits have been issued by the United States Department of Agriculture. Data on 67 kinds and varieties of fruits and 31 fruit juices are included in this compilation by Charlotte Chatfield and Laura I. McLaughlin of the Department's Bureau of Home Economics. Reliable analyses printed in this and other countries and unpublished data from cooperating Federal and State laboratories were used as the basis of these figures, and specialists in fruit production and handling were consulted regarding them. It is believed that these figures more nearly represent the composition of fruits now grown and marketed in this country than any other extensive list of analyses heretofore published.

Protein, carbohydrates, and all the other chemical constituents are given in percentage of the edible portion of each fruit. Fuel value appears as calories per pound and per 100 grams. In making the tables particular care was taken to determine what part of the fruit was considered refuse in making the analyses, and to designate the refuse percentage as skin, seeds,

or other inedible portion.

As a further aid to accuracy, the botanical as well as the common name is given for each fruit. For varieties that differ markedly in composition or for types grown in different localities, separate averages are given. Under apples, for instance, are figures for early, medium, and late varieties, as well as an average for all varieties. The averages for peaches grown in Georgia, North Carolina, Maryland, and New Jersey bring out interesting differences in sugar content.

With these new figures on fruit analyses, diets in both health and disease may be calculated more accurately. Economists can use them in making closer estimates of nutritive value in food consumption studies. They will give producer and consumer more exact knowledge of the chemical content of fruits grown and eaten.

Copies of these tables may be obtained free as long as the supply lasts by writing to the United States Department of Agriculture for Circular No. 50-C, "Proximate Composition of Fresh Fruits."

South African Citrus Exports

United States citrus exporters may be interested in the following article from the "Sunday Times" (Johannesburg, South Africa) of October 21, 1928, with reference to remarks of Prof. Powell, who has been visiting important citrus-producing countries in the interest of the British government:

"Within the next five years South Africa will be exporting 3,000,000 cases of oranges," Professor Clark Powell, Professor of Horticulture at the Transvaal University, Pretoria, told me this morning when discussing his recent tour of the citrus-growing areas of the British Empire.

"Professor Powell was given special leave by the Transvaal University in order to make an investigation into citrus-production all over the Empire on behalf of the Empire Marketing Board.

"Professor Clark Powell, who is also technical adviser to the South African Citrus Exchange, said the Union (of South Africa) had no need to fear competition in the European markets from the other citrus-producing countries of the Empire for they all marketed their fruit from

October to May.

"California is the only country which sends oranges to the United Kingdom all the year round" he said "but I doubt whether she will ever send more than 1,000,000 cases annually to the British Isles because of the huge market in the U. S. which consumes 50,000,000 cases yearly.

"As a matter of fact, the competition from California does the Union (of South Africa) producers good because it compels them to raise the quality of their oranges, and the high prices obtained for Californian fruit in England raise the price for South African fruit."

"There is a possibility of extensive shipments from Brazil in the near future, but here again we have not much to fear, as Brazilian oranges are poorly graded and packed compared with South African."

"South Africa still had a long way to go in improving the quality of her citrus, he declared, as a lot of the fruit coming over here was very poor. Prices this year had been high, not because of the quality of the fruit but because there had been a big demand for oranges and grapefruit."

"Please Say You Saw It In The Citrus Industry"



Expert Counsel
— from A. & G. —
for the asking.

Just what fertilizer to use to produce the desired results — this is often a problem extremely difficult to decide without expert advice.

We will be glad to help you solve your fertilizer problems. Scientific knowledge, backed by many years of experience, makes it easy for us to give you exact answers to your questions. What to you is a new and unusual problem, for example, is a problem we have had to contend with for other customers many times.

Such assistance is invaluable—especially when you take into consideration the long established reputation for productive results of A & G Brand Fertilizer.

Put your fertilizer problems up to us. We will be glad to solve them for you.

Patagonian Bird Guano
carried in stock —
also Genuine Peruvian
Guano. Prices on request.

**Atlantic & Gulf
Fertilizer Co.**

C. Nash Reid, President
Jacksonville, Florida

SEND FOR PRICE
LIST NO. 60



Citrus fruits, Texas

February, 1929

THE CITRUS INDUSTRY

Thirty-three

**HARVESTING PERIOD FOR
GRAPEFRUIT, ORANGES, AND
KUMQUATS IS EXTENDED IN
TEXAS AREA INFESTED WITH
THE MEXICAN FRUIT WORM**

The United States Department of Agriculture announces that, under the authority given in the regulations supplemental to the quarantine on account of the Mexican fruit worm the Plant Quarantine and Control Administration has approved the action of the State of Texas in fixing, for the present season, March 30 as the date on which grapefruit and certain other fruits must be removed from the trees in the Mexican fruit worm regulated territory. The host-free period prescribed in the regulations will begin on March 31, and no fruits susceptible to infestation by the Mexican fruit worm, such as grapefruits, oranges, kumquats, peaches, apples, guavas, and others, will be permitted to develop in orchards or to exist elsewhere within the regulated area after that date.

The date fixed for this season is one month later than the beginning of the host-free period in 1928. This change is made at the urgent request of orchard owners and other interests concerned, and was recommended by the State Department of Agriculture of Texas. The grapefruit and oranges this season are ripening later than usual due to rains occurring late in September and early in October, with the result that not much more than half of the crop has been moved out to date. The wholehearted cooperation of the residents in the regulated area has resulted in the practically complete elimination of secondary host-fruit trees, thus greatly reducing the possibility of any Mexican fruit worm infestation becoming established.

**ESTIMATE OF SPRING CROP
OF GRAPEFRUIT AND PINE-
APPLES IN PORTO RICO**

It is estimated that probably not more than ninety thousand boxes of grapefruit will be available for picking between now and May first, and that at least half of these will be canned locally, partly because of the size and quality of the fruit and partly because of the low prices prevailing in the north.

The pineapple crop may be somewhat below last years in quantity but at this early date its prospects are good as to size and quality, according to a radiogram received in the Department of Commerce from H. H. Dashiell, Assistant Trade Commissioner at San Juan, Porto Rico.

Prices Cut on Nursery Trees

**200,000 Trees To Select From In
This Sale. Real Quality Stock
In Many Varieties**

Every tree is backed by our experience of more than twenty-five years in the citrus nursery business. The selection is large enough to assure satisfaction. A visit to our nursery, three miles East of Leesburg on the main highway to Eustis and Tavares, will convince any experienced grower that here are the standard and quality trees he has been looking for; and at money-saving cut prices.

There are Parson Brown, Pineapple and Valencia oranges; Marsh Seedless and Duncan Grapefruit, Dancy Tangerines. There are trees on sour orange root (our standard), on rough lemon, and on grapefruit roots. Prices are slashed throughout our list; and on stock on rough lemon roots prices are unbelievably low.

There's a reason. We are determined not to carry over these trees. Despite our large volume of sales to date there are approximately 200,000 trees left at this writing. You can profit through our necessity. Come, and you will buy; and you will save big money on your purchase.

Lake Nursery Company

Leesburg, Florida

CITRUS SURVEY IN THE ORIENT REGION

Continued from page 31

by giving more names, but you will remember how little we know about the wild species. I do not mean that all of them are worth while to be used in economic planting, but it is unquestionable that some of them might be used as the parent plant in breeding new races, and some might be worthy for the rootstock. The Ponki or Cleopatra mandarin was recently found to be a good stock, then why not test out Sunki and microcarpa? Yuzu (C. junos) has been used for many hundred years as a good rootstock in Japan, then why not try out ichangensis and ichang lemon because of their natural affinity? Such questions will readily be raised and the solution will be reached only by the actual introduction of these plants into our gardens and by careful experiment to find out their true property. I hope that such a task will be accomplished under close cooperation of institutions like this station and my own citrus experiment station.

TISDALE APPOINTED PLANT PATHOLOGIST EXPERIMENT STATION

Dr. W. B. Tisdale, for seven years in charge of the Tobacco Experiment Station at Quincy, has been made head of the plant pathology department of the Florida Experiment Station, and has moved his office to the main station at Gainesville. He succeeds the late Dr. O. F. Burger, who was killed in an automobile accident some time ago.

Dr. Tisdale is a graduate of the Alabama Polytechnic Institute at Auburn, and he received his Ph. D. degree from the University of Wisconsin at Madison, where he specialized in plant pathology. For two years after receiving his degree at Wisconsin, Dr. Tisdale did teaching and research work there. He came to the Tobacco Experiment Station in February, 1922.

During his seven years at the Tobacco Experiment Station, Dr. Tisdale made measurable progress in solving some of the many disease problems which confronted cigar-wrapper tobacco growers of the area. By breeding and selection, he has developed a strain of tobacco which gives promise of being immune to blackshank, a most serious disease, and at the same time will yield well of a good quality leaf.

From Gainesville, he will supervise

THE CITRUS INDUSTRY

the plant disease work conducted by Experiment Station investigators at Gainesville, Quincy, Monticello, Hastings, Cocoa, Lake Alfred, Belle Glade, Homestead, Bradenton, and Plant City.

The 4-H clubs in the United States have more than 600,000 boys and girls enrolled in them. These boys and girls are carrying on definite projects in growing crops, livestock, or gardens under the directions of demonstration agents.

A good New Year's resolution: Grow healthy chicks in 1929.

CLASSIFIED

Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

REAL ESTATE

FOR SALE—By owner, eighty acres, two-year-old best looking grove at reasonable price. Howey-in-the-Hills. For further information write "A. Z." P. O. Box 1261, Orlando, Florida.

WILL EXCHANGE West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., El Paso, Texas.

FOR SALE—Pineapple land in winterless Florida. \$15 an acre. Almont Ake, Venus, Fla.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY, ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

SATSUMA BUDWOOD from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

WANT TO hear from owner having farm for sale; give particulars and lowest price. John J. Black, Box 93, Chippewa Falls, Wisconsin.

MISCELLANEOUS

RUNNER peanuts—Spanish peanuts Early speckled - Osceola - White Chinese and Bunch Velvet Beans. All varieties peas and Soybeans. Large or small lots. H. M. Franklin, Tennille, Georgia.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Fla.

WANTED

COMPLETE LINE OF CITRUS GROWERS' SUPPLIES

A well known reputable firm of national scope, marketing certain materials required by citrus growers, is extending its line of merchandise to cover complete re-

quirements of its customers. If you have something excellent to merchandise—fertilizer, orchard heaters, pest control material or equipment, or any similar product for wide distribution—I can tell you whom you should see. Address: J. T. Pierson, 503 South Union Drive, Los Angeles, Calif.

WHITE WYANDOTT Cockrels, regal strain—the best in the country, direct from Martin pens. Utility and show birds \$5.00 each; also eggs for hatching \$5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Fla.

BEGGARWEED SEED. Place your order for Beggarweed seed now and be assured of delivery. Write for special prices. Wm. G. Ranney, Box 297, Monticello, Fla.

PUREBRED PULLETS FOR SALE—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

LAREDO SOY BEANS, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

FARMER AGENTS: Make \$25.00 weekly selling Comet Sprayers. Profitable winter employment. You take orders. We deliver and collect. Commissions weekly. Established 35 years. Particulars free. Rusler Co., Box C-18, Johnstown, Ohio.

FOR SALE—All varieties bananas and citrus trees. D. A. Nigels, Palm Harbor, Fla.

FOR SALE—Dairy and stable manure, car lots. Link & Bagley, Box 464, Tampa, Fla.

AVOCADOS - SEED — Grafted. Reliable bearers only. John B. Beach, West Palm Beach, Florida.

BABY CHICKS: Send no money, shipped C. O. D., pay mail man when delivered. Leghorns \$14.00 per 100; reds, orpingtons, minors \$16.00; mixed \$13.00. Live delivery, postpaid, Florida Baby Chickery, Lakeland, Florida.

ROUGH LEMON Seedlings in any quantity, special summer sale, very attractive prices. A. E. Nichols, Box 262W, Tampa, Fla.


CITRUS EXPERT and landscape gardener desires superintendency of larger grove or estate. Address, P. O. Box 2072, Sarasota, Florida.

WANTED—Position on farm or grove. Go any where, or do any honest work. W. B. Shaw, Bradley Junction, Fla.

WANTED—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

Orders-Inquiries

60
pages
Send
for
FREE
copy



Can be
Secured
by
MAIL

POLK'S REFERENCE BOOK and Mailing List Catalog

Gives counts and prices on over 8,000 different lines of business. No matter what your business, in this book you will find the number of your prospective customers listed.

Valuable information is also given as to how you can use the mails to secure orders and inquiries for your products or services.

Write for Your FREE Copy
R. L. POLK & CO., Detroit, Mich.
Largest City Directory Publishers in the World
Mailing List Compilers—Business Statistics
Producers of Direct Mail Advertising